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THE CANADIAN HOME, FARM & BUSINESS CYCLOPEDIA

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THE CANADIAN
HOME, FARM AND BUSINESS
CYCLOPÆDIA.

A Treasury of Useful and Entertaining Knowledge

ON THE ART OF MAKING HOME HAPPY, AND AN AID IN SELF-EDUCATION; THE LAWS OF ETIQUETTE AND GOOD SOCIETY; HOME AMUSEMENTS; OUT-DOOR SPORTS, AND OTHER INTERESTING MATTERS OF SOCIAL AND EDUCATIONAL VALUE.

THE

SCIENCE AND PRACTICE OF FARMING:

WITH SPECIAL REFERENCE TO CANADA;

GIVING THE MOST COMPLETE AND PRACTICAL INFORMATION ON THE CULTURE OF THE SOIL; THE MANAGEMENT OF FARM ANIMALS, THE ERECTION OF FARM BUILDINGS, THE GARDEN, ETC., ETC.

ALSO,

GOODWIN'S PRACTICAL BOOK-KEEPING

COMPLETE.

A TREATISE ON ARITHMETIC, PENMANSHIP, FORMS OF BUSINESS CORRESPONDENCE; A DIGEST OF MERCANTILE LAW, AND VARIOUS FORMS OF LEGAL DOCUMENTS.

THE FARM DEPARTMENT, SPECIALLY WRITTEN FOR THIS WORK, BY

PROF. WILLIAM BROWN,

Of the Ontario Experimental Farm, Guelph.

THE BUSINESS DEPARTMENT UNDER THE SUPERVISION OF

GEORGE MACLEAN ROSE,

Ex-President of the Board of Trade, Toronto.

THE ENTIRE WORK CAREFULLY EDITED BY

A SYNDICATE OF CANADIAN SPECIALISTS.

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PREFACE.

THE Editors' aims in the preparation of the CANADIAN HOME, FARM, AND BUSINESS CYLOPÆDIA have been thoroughly practical. Their motive was to place within the reach of every householder a treasury of reference in all that concerns the Home and its affairs, Business Life and its duties, and such information as great practical experience could suggest in the cultivation and management of the Farm.

Almost every one has felt the need of a work to which one could turn in any difficulty for just such facts as this Cyclopædia will furnish—facts relative to the concerns of every day life, its duties and its pleasures, and the means by which the former is lightened and the latter enhanced. To obtain this information has hitherto involved the search through many volumes, which could only be acquired at much expense. Here it will be found in a concise and well-arranged compendium, "to be read and understood of all men;" and the assistance afforded will no doubt be appreciated.

A reference to the contents will show what a field of inquiry the work covers. Rarely within the scope of a single volume have so many subjects been so usefully compressed: with such a wealth of material presented to the reader, no one can fail to find either what he is in search of, or some facts that may be useful to him through life.

The CANADIAN HOME, FARM, AND BUSINESS CYCLOPÆDIA, besides its opening chapters on Home Amenities, will be found replete in all that contributes to home education, home arts, home pleasures, home comforts, and home amusements.

Large space is taken up with social forms and the usages of polite society, for the benefit of those of both sexes, who seek to shine in it, and for the information of all who desire to appear in the world to the highest personal advantage. Even those who are well informed in respect to these matters are sometimes at a loss to know what to do under certain circumstances. To all such this department of the work must be welcome.

The important matter of health, and how to preserve it; what to do in the case of illness; with hints in regard to cooking, carving, and other home accomplishments, will be found to have had attention. Driving, riding, swimming, rowing, and other physical exercises, have also been treated of, as have dancing, and in-door and out-door amusements.

Much space has also been devoted to educational, commercial, and legal affairs, which can hardly fail to be of the utmost value. Book-keeping, as it deserved, has been given special prominence, while arithmetic, penmanship, and the forms of business correspondence have been fully illustrated. The digest of mercantile law, and the forms of legal documents must be acceptable additions to the book, as must also the complete letter-writer, and the various forms of social invitation.

The Farm Department has been specially edited by Prof. W. Brown, Superintendent of the Experimental Farm, Guelph, than whom there is no better authority on this special subject in the Dominion. His own preface will be found in the book. The whole work, it is believed, meets a general need, and it is offered to the Canadian public with every confidence in its success.

THE EDITORS.

Toronto, 1st December, 1883.

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THE MARQUIS OF LANSDOWNE,

Governor-General of Canada.

THE CANADIAN

HOME, FARM AND BUSINESS

CYCLOPÆDIA.

The Dominion of Canada.

THE Dominion of Canada comprises the Provinces of Ontario, Quebec, Nova Scotia, New Brunswick, Prince Edward Island, British Columbia, and the North-West Territories. The central government is at Ottawa and the administration of Dominion affairs in the hands of the governor-general, and a privy council; and the legislative machinery consists of the House of Commons and the Senate.

ONTARIO,

the most populous member of the confederation, is bounded on the N. E. and E. by the Province of Quebec; on the S. E., S. S. W. and W. by the River St. Lawrence and the great lakes; and on the N.W. and N. by Manitoba. Its length from south-east to north-west is about 750 miles; and from south-west to north-east 500 miles. A large portion of territory is yet in dispute beetween the Ontario and Dominion governnments, the former claiming that it belongs to Ontario, the latter that it is really part of Manitoba. The total area of land and inland water of the province is about 107,780 square miles, or equal to 68,979,200 acres. The country's surface is undulating rather than mountainous, and is widely diversified with rivers and lakes. A main water-shed divides the waters of the St.

Lawrence from those of the Ottawa; and the Laurentian Hills run westward from the Thousand Isles to Lake Simcoe, and thence form the coast of Georgian Bay and Lake Huron. The agricultural capabilities are very great. A fertile belt extends over three-fourths of the present inhabited parts, and a considerable portion of the territory in the hands of the government. Large crops of spring and fall wheat are raised; as also oats, barley, rye, Indian corn, potatoes, turnips, &c., &c. The apple-orchards of the south-western counties are exceedingly productive, and pears, plums, grapes and cherries thrive there luxuriantly. The climate is tempered by the near proximity of the lakes, and the winter is shorter and less severe than that of Quebec. The principal rivers of Ontario are the tributaries of the Ottawa; the French, the Maganetawan, the Severn and the Nottawasaga falling into the Georgian Bay; the Saugeen, the Maitland and the Aux Sables falling into Lake Huron; the Thames running into Lake St. Clair; the Grand into Lake Erie; the Trent under different names into Bay Quinté, and the Niagara into Lake Ontario. The gorgeous St. Lawrence sweeps through the eastern part of the province from Kingston. The lakes are many and the largest on the globe. They are Superior, Huron, Erie and Ontario. Among the lesser lakes are Nepigon, Simcoe and Nipissing. The province is rich in minerals. Iron, copper, lead, plumbago, antimony, arsenic, manganese, gypsum; marble of superior quality and building stone abound in the region between Georgian Bay and the Ottawa. On the north shore of Lake Ontario there are extensive copper mines, and on the shore of Lake Superior, especially at Thunder Bay, there are valuable silver deposits. There are also found there amethysts, agates, mica, iron, gold, cobalt and bismuth. In the south-westerly part of the province are inexhaustible petroleum wells; and at Goderich and Kincardine are valuable salt wells. Large peat beds exist in many parts of the province. An enormous lumber trade is carried on in the province, and the chief lumber districts are the Muskoka region and the waters of the Ottawa. Settlement has up to a late date been made only south of the Laurentian Range, but behind these hills there is an extensive tract of rich agricultural land as level as the St. Lawrence valley and timbered with a heavy growth of mixed white pine and hardwood. Settlement is pouring in now upon the new district. Enormous strides in railway development have been made in the past thirty years, and the province has now upwards of 4,000 miles of railway. There are several canals in the province; the Welland between Lakes Erie and Ontario to avoid the Niagara Falls, the Rideau between Kingston and Ottawa, and the St. Lawrence Canals necessitated by the rapids of the

great river. The system of education is excellent, affording to rich and poor alike the means of free schooling. The schools are supported by a tax on property supplemented by aid from the provincial funds. The Roman Catholics have separate schools in the cities and large towns, but in the sparsely settled districts there is only the mixed free school. There is a normal school at Toronto disigned to perfect teachers in the profession of teaching. There are numerous public institutions in the province chiefly under the care of the government; for example, the lunatic asylums at Kingston, Toronto, London, Amherstburg and Orillia; the reformatory prison at Penetanguishene; the asylum for the blind at Brantford; the deaf and dumb asylum at Belleville; the normal school, university college and Osgoode Hall at Toronto. The Courts of Justice are the Queen's Bench, Common Pleas and Chancery, each of which is presided over by a Chief Justice and two assistants; and a Court of Error and Appeal composed of a president and the judges of superior courts of law and equity. In each county is a County Court, presided over by a County Court Judge. All the judges are appointed and paid by the Dominion government. The judges of the Superior Court go on circuit to each county of the province twice in the year to hold assizes for the trial of civil and criminal cases. The judges of the Court of Chancery hold their courts in various counties as well as in Osgoode Hall. There are five episcopal dioceses in the province, Toronto, Niagara, Ontario, Huron and Algoma; and five Roman Catholic Dioceses: Toronto, Ottawa, Kingston, Hamilton and London. The largest, and in all respects the most important city in Ontario is Toronto, the capital of the province. The city with the late added suburbs now numbers not far short of 100,000 souls. It has a fine situation on Lake Ontario, is handsomely and regularly built, and contains a number of handsome and costly buildings. Ottawa, the capital of the Dominion, is beautifully situated on the river of the same name. It contains the parliament buildings, one of the most imposing edifices on the continent. Kingston is a well built and fortified city with a delightful situation at the outlet of Lake Ontario. Hamilton is an active commercial city at the head of navigation on Lake Ontario. London is a prosperous inland city in the centre of the Western Peninsula. Guelph and Brantford are also active and full of promise. Ontario contains many spots of interest to the tourist. Besides the Thousand Islands of the St. Lawrence, and the unrivalled scenery of the great lakes, there are the Falls of Niagara, the Falls of Kakabikki on the River Kaministiquia, thirty miles from its outlet at the head of Lake Superior. The sound of the latter falls resembles the roar of distant thunder and the rumbling of an earthquake.

Every year large numbers of immigrants settle in Ontario, and in addition to the Dominion immigration agencies, there is also a provincial immigration office in Toronto. The existence of Ontario as the old province of Upper Canada begins at 1791, previous to which it formed part of the province of Quebec. Major-General J. G. Simcoe, was the first lieutenant-governor; and the first parliament met at Niagara on September 17th, 1792. In 1820 political dissentions arose in Lower Canada, which opened a gulf between the French and the English colonies. In 1837 the discontent took another form, and broke forth in rebellion. In 1841, a union between Ontario and Quebec, then known as Upper and Lower Canada, was again effected, and this union stood till 1867, when both the provinces were merged into confederation. The legislative machinery of the province consists of a lieutenant-governor, an executive council of five members, and a legislative assembly of eight elected every four years.

QUEBEC.

This province is bounded on the north by Labrador and Hudson's Bay; on the east by Labrador and the Gulf of St. Lawrence; on the South by Baie des Chaleurs, New Brunswick and the State of Maine; on the south-east by New Hampshire, Vermont and New York, and on the south-west by the river Ottawa and the province of Ontario. Its length from Lake Temiscamingue to Anse au Blanc Sablon, in the Strait of Belle Isle, is about 1,000 miles and from the above-named lake to Cape Gaspé is about 700 miles; breadth about 300 miles; giving a total area in land and water of about 193,300 square miles. The surface of the country consists of boundless forests, great rivers and lakes, considerable prairie stretches, bold rocky heights and the clear-spots of civilization. The principal mountain ranges are the Notre Dame and Green Mountains, which stretch in parallel lines from S. W. to N. E. The rocky masses connected with the mountain chain that line the St. Lawrence advance in many places close to the river and form precipitous cliffs from 200 to 300 feet high. The province is richly endowed with mines of gold, copper, iron and other ores. Gold is found chiefly on the banks of the Chaudiére. Copper is found in large quantities in the eastern townships. Iron is found in several districts, and it is almost entirely free from phosphorus. Lead, silver, zinc, platinum, &c., also occur in various sections of the province. The St. Lawrence flows through Quebec, receiving just above Montreal the Ottawa, a river 800 miles long. Below Montreal, on the right, it receives the Richelieu river which has its origin in Lake Cham-

plain; the St. Frances, rising in Lake Memphremagog, and the Chaudière at the outlet of Lake Megantic; and, on the left, it receives the St. Maurice, the Batiscan and the Saguenay rivers. The climate of Quebec is warmer than that of Ontario in summer and colder than that of the latter in winter. The soil is generally rich and adapted to the growth of cereals, hay and green crops; apples and plums, grow in abundance. A large portion of the province is covered with forest, consisting for the greater part of white and red pine. The other kinds of timber are ash, birch, beech, elm, hickory, black walnut, maple, cherry, butternut, basswood, spruce, fir, &c. There are now not far from 2,000 miles of railway in operation in the province. For judicial purposes the province is divided into 20 districts each district having ample and equal jurisdiction in all matters except as to revision and appeal. The superior court sits in revision only at Montreal and Quebec. Public instruction is under control of the superintendent of education who is assisted by a deputy and a council of twenty-one members. Two-thirds of these are Roman Catholics, one-third Protestants. There are separate schools, and a normal school for training teachers. The Protestant universities are McGill College, at Montreal, founded in 1827, and Bishop's College, Lennoxville, founded in 1843. The Roman Catholic university of Laval was founded by the Quebec Seminary in 1852. The Roman Catholic dioceses are seven in number: the arch-diocese of Quebec, and the dioceses of Montreal, Three Rivers, Ste. Hyacinthe, Sherbrooke, Rimouski, and Chicoutimi. The Protestant dioceses are two in number: Montreal and Quebec. The four principal cities are Montreal, population, 140,747; Quebec, 62,446; Three Rivers, 8,670; and Sherbrooke, 7,227. The chief manufactures of the province are cloth, linen, furniture, leather, sawn lumber, flax, paper, hardware, chemicals, soap, boots and shoes, cotton and woollen goods, steam engines and locomotives, wooden ware of all descriptions, agricultural implements, ships, &c. There are ample water-power facilities for manufacturing. Public affairs are administered by a lieutenant-governor, an executive council of seven members, a legislative council of thirty-four members appointed for life, and a legislative assembly of sixty-five members. There is a court of Queen's Bench with a chief justice and five assistants; a Superior Court with chief justice and twenty-eight assistants; a court of vice-admiralty; courts of quarter sesions, and courts for the summary trial of small cases. There are several canals which greatly facilitate commerce: Lachine, extending from Montreal to Lake St. Louis; the Beauharnois uniting Lake St. Francis and St. Louis; the Chambly uniting Lake Champlain and the Richelieu river. Among the points of interest to the tourist are the Chaudière Falls, the

Indian name of which is Kanago "the Boiling Pot;" the Falls of Montmorency, seven miles below Quebec; the gloomy, sullen Saguenay river rolling cold between its rocky walls, and numerous other points of delightful resort. Sebastian Cabot, it is said, discovered the province in 1497; but Jacques Cartier made the first settlement near Quebec, in 1541. Up till 1760, when Wolfe conquered Quebec, the country was held by the French. In 1792 the province was divided into Upper and Lower Canada; in 1841 these were re-united; but in 1867 both were merged in confederation.

NOVA SCOTIA,

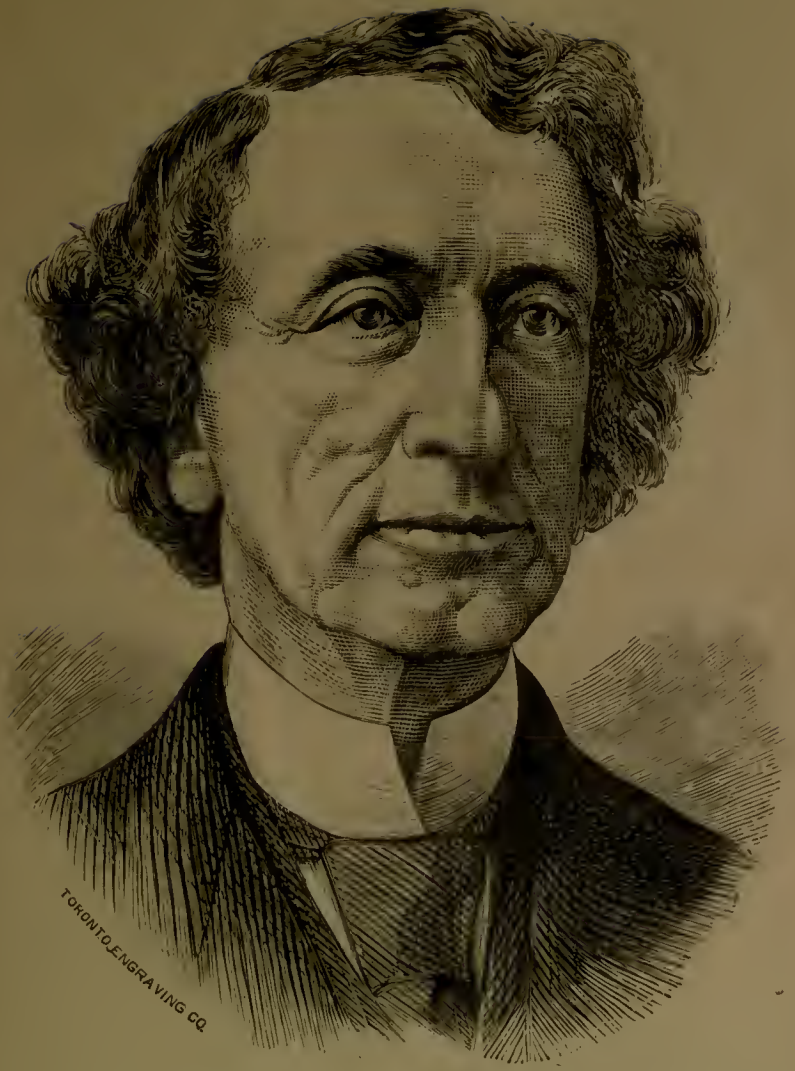
originally known as Acadia, is a long narrow peninsula fronting on the Gulf of St. Lawrence. The country is beautifully variegated by ranges of lofty hills and broad valleys, both of which run longitudinally through the province. Its Atlantic frontier is composed of poor soil, though it has some valuable gold and other mineral deposits. Along parts of the Bay of Fundy extends a ridge of mural precipice from 100 to 600 feet high. Beyond this barrier lies the rich valley of Annapolis and the Basin of Minas, celebrated in Longfellow's "Evangeline." Nova Scotia covers an area of about 3,000 square miles. The principal lakes are Rossignal twenty miles long, and Ship Harbour lake fifteen miles long. These are on the main-land. Cape Breton, separated from the mainland by the Strait of Canso, is also part of the province. Here are several large lakes. The great Bras d'Or is a magnificent expanse of water fifty miles long, of great depth, and abounding with valuable fishes. On Cape Breton are located valuable coal mines, the most important of these being at Sydney. There are several rivers navigable for distances varying from two to twenty miles. The most remarkable body of water in the province is the Basin of Minas, the east arm of the Bay of Fundy, penetrating sixty miles inland. The tides rush in here with great violence and form what is known as a "bore." At the high tides they sometimes rise from forty to fifty feet; while in Halifax harbour, on the opposite side, the spring tide rises only from six to eight feet. The province possesses valuable resources in gold, iron, copper, silver, lead and coal. The quantity of iron belonging to the Londonderry iron company is inexhaustible; and the product is as good as the best Swedish. Agates, amethysts, jaspers, chalcedonies and cairngorms abound in the amaydaloidal trap along the Bay of Fundy. The climate is temperate; the thermometer seldom goes 20° below zero; and the heat seldom reaches 98° above zero in the shade. The springs are tedious; but the summer heat for a brief season

is excessive; the autumn is delightful. The vegetation is rapid, and hay, oats, Indian corn, buckwheat, wheat, barley, potatoes, turnips, and other grains and roots thrive well; while fruit is successfully produced. The apple orchards of Annapolis and King's County extend along the roadside in an unbroken line for fifty miles. Fogs haunt the coast line, and make the summer weather chill. Manufactures are limited; but of late cotton and sugar have been added to the list of coarse cloths, flannels, blankets, tweeds, &c. The province has a coast line of 1,000 miles, all along which the fisheries are carried on. Next to agriculture, fishing is the great industry. The bays, harbours and inland lakes yield salmon, cod, halibut, haddock, mackerel, herring, shad, lobster, &c. There are also some oyster beds Shipbuilding is extensively engaged in; and in some years ships with an aggregate of 53,000 tons are built. There are over 500 miles of railway in operation in the province. The Intercolonial, a Government road, runs from Halifax to Amherst, 138 miles, thence proceeding onward to St. John, N. B., and Rivière du Loup. There are two canals, one from Halifax to Cobequid Bay, the other connecting St. Peter's Bay, on the Atlantic coast of Cape Breton, with Great Bras d'Or Lake. The chief city is Halifax; population, 36,100 . . . . . The harbour is the finest on the continent, and protected by a fortress armed with batteries of three and six hundred-pounder Armstrong rifled guns. Habitation is accessible in nearly every case by rail or steamboat. Education is free, the non-sectarian school system prevailing. The chief seats of learning are Dalhousie College and University, St. Mary's College (R. C.), Presbyterian College, Halifax, Acadia College (Baptist), at Wolfville, St. Francis College (R. C.), Antigonish, and King's College and University (Church of England), Windsor. Nova Scotia has little timber or agricultural lands now to offer to settlers; so that increase must come from within herself. The province was visited by John Cabot and his son, Sebastian, in 1497; was colonized in 1604 by De Monts, a Frenchman. In 1713 the country was ceded to the English by the French. In 1763 the Island of Cape Breton was annexed; in 1784 the Province of New Brunswick was created out of Nova Scotia (Acadia), and in 1867 Nova Scotia became a province of the Dominion of Canada.

NEW BRUNSWICK

is bounded on the N. W. by Quebec, N. by Baie des Chaleurs, E. by the Gulf of St. Lawrence and Northumberland Strait, S. by the Bay of Fundy and a part of Nova Scotia, and on the W. by the State of Maine.

The greatest length from north to south is 230 miles; greatest breadth, 190 miles; area, 27,322 square miles. The surface is generally flat or undulating. The shores of the Gulf of St. Lawrence, and the waters of the St. John, Restigouche, Miramichi, Richibucto, and Ste. Croix rivers contain valuable tracts of spruce and pine timber. All these rivers mentioned are large, and the St. John, 450 miles long, is navigable for 100-ton vessels to Fredericton, ninety miles from the sea. Shallow-bottomed steamers run thence a hundred miles further up the river. Two hundred and twenty miles up the river is a magnificent cataract known as Grand Falls, about eighty feet high. The valley of the St. John is exceedingly fertile, and salmon, bass, pickerel, mackerel, and other valuable fishes are found in them in considerable number. The chief industry of the province is agriculture, next lumbering, then fishing, and after that manufactures. There are some valuable mineral deposits found in the "mineral belt" skirting the southern coast, and then striking northerly. The lakes are numerous, the principal one being Grand Lake, thirty miles long, and two to seven miles wide. This communicates with the river St. John, fifty miles from the sea. Coal is plentiful, and iron is abundant. Copper and manganese also abound. The valuable bituminous deposit in Albert county produces for every ton of coal 100 gallons of crude oil. There is no country on the continent more bountifully wooded and watered, and the soil is exceeding fertile. The climate is subject to extremes of heat and cold. All kinds of crops grow and ripen well. There are several manufactures in operation of late years. There is a free non-sectarian system of education; and, like in Nova Scotia, educational affairs are administered by a chief superintendent and a board of education. There is no minister of education, as in Ontario, and the system works admirably. There are about 1,400 Indians in the province, chiefly Micmacs and Milecites. The government is administered by a lieutenant-governor, and an executive of nine members; there is a legislative council of eighteen members, and a house of assembly of forty-one members, the latter elected every four years. There is a supreme court, with a chief justice and four puisne judges having jurisdiction in law and equity; a marriage and divorce court; a vice-admiralty court; and a county court for each county. There is a large quantity of excellent settlement land yet in the province; and extensive timber areas. The province was settled by the French in 1639. It fell into the hands of the British after the conquest of Quebec. In 1867 it joined the Confederation. Shipbuilding is one of its important industries.



RIGHT HON. SIR JOHN A. MACDONALD, K.C.B.,

PRIME MINISTER OF THE DOMINION OF CANADA.

PRINCE EDWARD ISLAND.

This little province, formerly called St. John's Island, lies in the Gulf of St. Lawrence, and is washed on the north by the Gulf, and separated from New Brunswick on the east, and Nova Scotia on the south, by Northumberland Strait. It is 130 miles long; its breadth is 34 miles, though at its narrowest part it is but 4 miles wide. The total area is 21,134 miles. The surface undulates gently. At one time the land was covered with a dense forest of beech, birch, maple, poplar, cedar; and some of the original forest still remains. The soil is a light reddish loam, and is exceedingly fertile. The chief crops are wheat, barley and oats, and these are produced in heavy crops. The winter is long and cold; but the summer is delightful and rapidly brings the crops to maturity. The fisheries are valuable; and the north coast is visited by cod and mackerel, sometimes in abundance. Ship-building is an important industry in the island. There is a lieutenant-governor, an executive council of five members, and a legislative assembly of twenty-two representatives. Justice is administered according to the English law and practice. The free non-sectarian school system, as in Nova Scotia and New Brunswick, prevails. Besides the public schools there are St. Dunstan's College (Roman Catholic) and Prince of Wales' College (Protestant). The Lord Bishop of Nova Scotia exercises episcopal authority over the island, but the Roman Catholics have the diocese of Charlottetown. Charlottetown is the chief city and the capital; and has a population of over 10,000. Georgetown and Summerside are the other chief towns. This island was among Cabot's earliest discoveries; but in 1663 it was granted to Sieur Doublet, a French naval officer. It was taken by the British in 1755, restored by the treaty of Aix-la-Chapelle, retaken and finally ceded to Great Britain in 1758. In 1768 it was erected into a separate government; in 1773 the first house of assembly met, and in 1799 the name of St. John was changed to Prince Edward, in compliment to Edward, Duke of Kent, who that summer had visited the island. In 1873 it joined, after a fit of stubbornness, the Canadian confederation.

BRITISH COLUMBIA.

This province is the Pacific sister of the confederation. It is bounded north by the 60th parallel of latitude, east by the main chain of the Rocky Mountains; south by the United States, and west by Alaska, the Pacific Ocean and Queen Charlotte's Sound. The area is 350,000 square miles. The coast-line is deeply indented; the northern part of the

colony is diversified by mountain, lake and river, and is of extraordinary fertility, producing in abundance cereals, vegetables and fruit. The rich gold-valley of the Fraser River is a good pastural region, and with irrigation would be excellent for agriculture. There are large forest districts through the province, the timber of which is very valuable. The Douglas pine yields spars from 90 to 100 feet long, and 20 to 24 feet in diameter. Often a tree 300 feet long without knot or blemish is found. At Burrard Inlet, 9 miles from New Westminster, there are pine trees from 27 to 30 feet in diameter. The natural resources are very valuable. Gold is found on the Fraser and Thompson rivers and in the Cariboo district, while the yield of the province for the past thirteen years is valued at nearly $28,000,000. There are also valuable silver and copper mines. There are extensive and valuable coal beds, easy of access. The fisheries are valuable, and one of the chief industries. The climate is mild, and cattle can stay on the plains and among the hills during the winter without housing. Winter lasts from November till March; but snow seldom remains long on the ground. Wheat, barley, potatoes, turnips, apples, pears, &c., grow luxuriantly. The province, too, is rich in fur-bearing animals, among these being black, brown and grizzly bears, lynx, marten, fox and beaver. The chief rivers are the Fraser, which pursues a rapid course between steep and rocky banks, until, approaching the sea, it presents a fertile and richly wooded valley from fifty to sixty miles in length. The Fraser is 700 miles long. The Thompson surpasses the latter in richness of scenery; and it flows through one of the most beautiful countries in the world. Steamers ascend the Fraser for 100 miles; and beyond the terminus a government gravel road begins, and extends up the river for 450 miles. Burrard Inlet is an excellent harbour, and Port Moody, one of its inlets, will be the terminus of the Canada Pacific Railway. Public affairs are in the hands of a lieutenant-governor and an executive of five members; a legislative assembly of twenty-five members, elected every four years. Victoria, the capital, has a population of 5,925. The colony was first established in 1858. A large number of Chinese, attracted by railway building, have settled in the province. Some came direct from China, others from California and other parts of the American Pacific coast. The Canada Pacific railway in course of construction, is intended to connect British Columbia with the eastern provinces. There are large areas of first-rate agricultural lands in the hands of the government, which makes the province suitable for immigration, and large districts of timber.

MANITOBA

is bounded on the S. by the United States, and on the N. E. and W. by the North-West Territories of the Dominion. Area, 14,340 square miles. The name Manitoba is a contraction made by the French Canadian *voyageurs* of the Cree word Manitowaban. Manito signifies a spirit, and Waban means a strait: as the waters of a strait in Lake Manitoba are excited sometimes in an unusual way the Indians believed that some mighty water-sprite moved them, and so they called the lake Manito-waban. The soil is exceeding fertile. The greater part of the province is one huge sweep of rolling prairie, covered with long wavy grass and wild-flowers, and every here and there clumps of poplar, white oak and other trees. Wheat ripens in 110 days and yields from twenty to twenty-five bushels to the acre, all kinds of garden vegetables grow luxuriantly, as does fruit, and all the cereals known to Canada. The climate is severe in winter, so that the mercury sometimes freezes; but the air is so dry, and the bitterest nights often are so deathly calm, that the intense frost is not felt so keenly. Fierce blizzards sometimes sweep over the bleak prairie, often unroofing houses and barns. The largest lakes are Winnipeg and Manitoba, the former 280 miles long, and from five to fifty-seven miles wide, the latter 110 miles long and twenty-five miles wide. Winnipeg * is the capital and has a population of 7,985. There are two bishopries that of St. Boniface, Roman Catholic, and Rupert's Land, Church of England. The bishop lives at St. John, near Winnipeg. Public affairs are in the hands of a lieutenant-governor, an executive of five members, a legislative council of seven and a house of assembly. The province has three colleges, St. John's, Church of England; St. Boniface, Roman Catholic; and Kildonan, Presbyterian; besides a number of convents and schools. In March 1869, the Hudson Bay Company surrendered to the Imperial Government their territorial rights and governing responsibility in the North-West; and on July 16th, 1870, England handed over the territory to Canada. It was then that took place the Red River rebellion; and after some time Manitoba entered the confederation. Development has begun in Manitoba at an astonishing rate. Immigrants are flocking in from all quarters, and the Canada Pacific railway will soon join the province to the skirt of the rocky mountains. The great drawback is scarcity of fuel; and the water in some regions is brackish, being diluted with salts.

* The figures of population given for Winnipeg, are those of the census of 1881. Th population now is said to be about 25,000.

NORTH-WEST TERRITORIES.

This extensive and valuable region, though yet not erected into provinces, being the great heritage of Canada, and the future home of millions of immigrants, deserves mention in speaking of the confederation. The territories include all the British possessions on the northern part of the American continent outside of those provinces named. The area is estimated at the enormous figure of 2,750,000 square miles. Till 1870 this region was known as the Hudson Bay Territory, from Henry Hudson, who discovered the Bay in 1610, and perished on its shores. Till 1870, when the country became part of the Dominion of Canada, it was governed by the Hudson Bay company. There are numerous lakes and rivers in the territory, the principal rivers being the Nelson, Severn, Abbitibbi, East Main and Great Whale, all flowing into the Hudson's Bay; the Mackenzie, Coppermine, and Great Fish, flowing into the Aretic Ocean; the Saskatchewan, Assiniboine and Red River, falling into Lake Winnipeg, and the Koksoak and Natwatkaine, into Hudson's Straits. The Mackenzie, one of the greatest rivers in the world, is 2,500 miles long, and flows through a fertile and finely wooded country and skirted by metalliferous hills and coal measures. The country is rich in the various minerals, and contains wide areas of pine. In the far north are long dreary stretches of muskeg. The agricultural capabilities of at least 60,000 square miles are great. The Saskatchewan country is of unrivalled fertility, and is estimated to be capable of supporting 90,000,000 of people. The winters are severe, but in the delightful summers abundant crops of roots, grain and fruits are produced. The Canada Pacific runs through the Saskatchewan country, and various other railroads are projected through the territories. Settlers and cattle ranchers flock every year into the region.

CENSUS OF THE DOMINION OF CANADA—1881.

Statement showing Population of the Dominion by Electoral Districts.

PROVINCE.	Population.
ONTARIO.	
Glengarry	22,221
Cornwall	9,904
Stormont	13,294
Dundas	20,598
Prescott	22,857
Russell	25,082
Ottawa, City	27,412
Grenville, South	13,526
Leeds and Grenville, North	12,929
Carleton	24,689
Brockville	12,514
Leeds, South	22,206
Lanark, South	20,032
Lanark, North	13,943
Renfrew, South	19,160
Renfrew, North	20,965
Frontenac	14,093
Kingston, City	14,091
Lennox	16,314
Addington	23,470
Prince Edward	21,044
Hastings, East	17,313
Hastings, West	17,400
Hastings, North	20,479
Northumb'd, E.	22,299
Northumb'd, W.	16,984
Peterborough, E	23,956
Peterborough, W	13,310
Durham, East	18,710
Durham, West	17,555
Victoria, South	20,813
Victoria, North	13,799
Muskoka	27,204
Ontario, South	20,378
Ontario, North	28,434
Toronto, East	24,857
Toronto, Centre	22,983
Toronto, West	38,566
York, East	23,312
York, West	18,884
York, North	24,602
Simcoe, South	20,891
Simcoe, North	49,238
Peel	16,387
Cardwell	16,770
Welland	26,152
Niagara	3,445
Monck	17,145
Lincoln	22,963
Haldimand	18,619
Wentworth, S.	14,993
Wentworth, N.	15,998
Hamilton, City	35,961
Halton	21,919
Wellington, S.	25,406
Wellington, Cen	22,265
Wellington, N.	25,876
Grey, South	21,127
Grey, East	29,668
Grey, North	23,334
Norfolk, South	10,374
Norfolk, North	17,219
Brant, South	21,975
Brant, North	11,824
Waterloo, South	21,754
Waterloo, North	20,986
Elgin, East	28,147
Elgin, West	14,214
Oxford South	24,732
Oxford, North	25,361
Middlesex, East	30,600
Middlesex, West	21,496
Middlesex, N	21,239
London, City	19,746
Perth, South	24,778
Perth, North	24,257
Huron, South	23,393
Huron, Centre	26,474
Huron, North	27,103
Bruce, South	39,893
Bruce, North	24,971
Bothwell	27,102
Lambton	42,616
Kent	36,626
Essex	46,962
Algoma	20,320
Total	1,923,228
QUEBEC.	
Bonaventure	18,908
Gaspe	25,001
Rimouski	33,791
Temiskouata	25,484
Kamouraska	22,181
L'Islet	14,917
Montmagny	15,268
Bellechasse	18,068
Levis	27,080
Dorchester	18,719
Beauce	32,020
Lotbiniere	20,857
Megantic	19,956
Nicolet	26,611
Drummond and Arthabaska	37,360
Richmond and Wolfe	26,339
Compton	19,581
Sherbrooke	12,221
Stanstead	15,556
Ysmaska	17,091
Bagot	21,199
Shefford	23,233
Brome	15,827
Richelieu	20,218
St. Hyacinthe	24,631
Rouville	18,547
Iberville	14,459
Missisquoi	17,784
Vercheres	12,449
Chambly	10,858
St. Jean	12,265
Laprairie	11,436
Napierville	10,511
Chateauguay	14,393
Huntingdon	15,495
Beauharnois	16,005
Soulanges	10,220
Vaudreuil	11,485
Chicoutimi and Saguenay	32,499
Charlevoix	17,901
Montmorency	12,322
Quebec, East	31,900
Quebec, Centre	17,898
Quebec, West	12,648
Quebec, County	20,278
Portneuf	25 175
Champlain	26,818
Trois-Rivieres	9,296
St. Maurice	12,986
Maskinonge	17,493
Berthier	21,838
Joliette	21,988
L'Assomption	15,282
Montcalm	12,906
Montreal, Centre	25,078
Montreal, East	67,506
Montreal, West	48,163
Hochelaga	49,079
Jacques Cartier	12 345
Laval	9,462
Terrebonne	21,892
Deux-Montagnes	15,856
Argenteuil	16,062
Ottawa, County	49,432
Pontiac	19,939
Total	1,359,027
NOVA SCOTIA.	
Inverness	25,651
Victoria	12,470
Cape Breton	31,258
Richmond	15,121
Guysborough	17,808
Halifax	67,917
Lunenburg	28,583
Queen's	10 577
Shelburne	14,913
Yarmouth	21,284
Digby	19,881
Annapolis	20,598
King's	23,469
Hants	23,359
Colchester	26,720
Pictou	35,535
Antigonish	18,060
Cumberland	27,368
Total	440,572
N. BRUNSWICK.	
Albert	12,329
St. John, City	26,127
St. John, County	26,839
Charlotte	26,087
King's	25,617
Queen's	14,017
Sunbury	6,651
York	30,397
Carleton	23,365
Victoria	15,686
Westmoreland	37,719
Kent	22,618
Northumberland	25,109
Gloucester	21,614
Restigouche	7,053
Total	321,233
B. COLUMBIA.	
New Westminst'r	15,417
Cariboo	7,550
Yale	9,200
Victoria	7,301
Vancouver	9,991
Total	49,459
P. E. ISLAND.	
Prince	34,347
Queen's	48,111
King's	26,433
Total	108,891
MANITOBA.	
Selkirk	12,771
Provencher	11,496
Lisgar	5,786
Marquette	19,449
Extension	16,452
Total	65,954
THE TERRITORIES	56,446
Grand Total	4,324,810

Comparative Statement showing Population of principal Cities and Towns.

NAMES.	PROVINCES.	POPULATION.		Increase.	Decrease.
		1871.	1881.		
Montreal	Quebec	107,225	140,747	33,522	
Toronto	Ontario	56,092	86,415	30,323	
Quebec	Quebec	59,699	62,446	2,747	
Halifax	Nova Scotia	29,582	36,100	6,518	
Hamilton	Ontario	26,716	35,961	9,245	
Ottawa	Ontario	21,545	27,412	5,867	
St. John	New Brunswick	28,805	26,127	.....	* 2,678
London	Ontario	15,826	19,746	3,920	
Portland	New Brunswick	12,520	15,226	2,706	
Kingston	Ontario	12,407	14,091	1 684	
Charlottetown	Prince Edward Island	8,807	11,485	2,678	
Guelph	Ontario	6,878	9,890	3,012	
St. Catharines	Ontario	7,864	9,631	1,767	
Brantford	Ontario	8,107	9,616	1,509	
Belleville	Ontario	7,305	9,516	2,211	
Trois-Rivieres	Quebec	7,570	8,670	1,100	
St. Thomas	Ontario	2,197	8,367	6,170	
Stratford	Ontario	4,313	8,239	3,926	
Winnipeg	Manitoba	241	7,985	7,744	
Chatham	Ontario	5,873	7,873	2,000	
Brockville	Ontario	5,102	7,609	2,507	
Levis	Quebec	6,691	7,597	906	
Sherbrooke	Quebec	4,432	7,227	2,795	
Hull	Quebec	.....	6,890	.....	
Peterborough	Ontario	4,611	6,812	2,201	
Windsor	Ontario	4,253	6,561	2,308	
St. Henri	Quebec	.....	6,415	.....	
Fredericton	New Brunswick	6,006	6,218	212	
Victoria	British Columbia	3,270	5,925	2,655	

* The indicated decrease of the population of the City of St. John is attributable to the great fire which occurred in the year 1877, when half of the city was laid in ashes. Great numbers were thereby driven into the surrounding districts, and many whose business and social ties were thus severed did not return to the city.

Summary Statement showing the Religions of the People.

PROVINCES.	Adventists.	Baptists.	Brethren.	Roman Catholics.	Church of England.	Congregational.	Disciples.	Jews.	Lutherans.	Methodists.	Presbyterians.	Others.	Not given.
Ontario	606	106,680	7,714	320,839	336,539	16,340	16,051	1,193	37,901	591,503	417,749	27,058	12,965
Quebec	4,210	8,853	682	1,170,718	68,797	5,244	121	989	1,003	39,221	50,287	6,294	2,608
Nova Scotia	1,536	83,761	218	117,487	60,255	3,506	1,826	19	5,639	50,811	112,488	1,408	1,618
New Brunswick	738	81,092	164	109,091	46,763	1,372	1,476	55	324	34,514	42,883	1,491	1,260
B. Columbia	10	434	7	10,043	7,804	75	23	104	491	3,516	4,095	3,726	19,131
P. E. Island	13	6,236	17	47,115	7,192	20	594	....	4	13,485	33,835	250	100
Manitoba	8	9,449	29	12,246	14,297	343	102	33	984	9,470	14,292	2,374	2,327
Territories	....	20	....	4,443	3,166	....	....	....	4	401	531	1,061	46,760
Total	7,211	296,525	8,831	1,791,082	574,818	26,900	20,193	2,393	46,350	742,981	676,165	43,692	86,769

COMMERCE, DOMINION OF CANADA.

No. 1.—Statistical View of the Commerce of the Dominion of Canada during fiscal year ending 30th June, 1881.

COUNTRIES.	COMMERCE. Value of Exports.	Value of Goods Entered for Consumption.	Duty Collected.	SHIPPING. Tonnage of British and Canadian Vessels. Entered Inwards.	Entered Outwards.	Tonnage of Foreign Vessels. Entered Inwards.	Entered Outwards.	Total.
	$	$	$ c.	Tons.	Tons.	Tons.	Tons.	
Great Britain	53,747,370	43,583,808	8,772,949 97					
United States	32,879,098	36,704,112	5,649,151 89					
Newfoundland	1,523,467	652,304	3,251 22					
British West Indies	1,787,813	1,888,695	718,567 09					
Spanish West Indies	1,167,612	1,899,813	863,547 69					
French West Indies	111,175	18,185	2,137 73					
Danish West Indies	57,929	8,080	369 49					
British Guiana	215,044	173,978	109,285 29					
China	19,761	592,245	142,106 10					
Japan	.....	818,728	206,360 61					
Mexico	16,701	14,160	5,187 06					
Panama	348	.....	.....					
South America	715,062	615,434	273,813 12					
St. Pierre	152,984	18,490	2,136 45	2,667,240	2,724,377	1,365,706	1'347,014	
France	662,711	1,631,332	597,948 79					
Germany	84,932	934,266	215,108 04					
Spain	46,653	399,684	167,412 55					
Portugal	108,594	56,893	25,307 99					
Italy	145,997	88,726	40,956 25					
Belgium	258,433	412,834	90,250 84					
Holland	215,754	225,190	372,335 63					
Denmark	12,120	36	21 51					
Norway	32,407	16,983	2,949 12					
Russia	11,617	14,404	718 47					
Other Countries	311,912	843,224	230,772 21					
Coin and Bullion	971,005	.....	.....					
Est.am't short ret'd	3,023,322	.....	.....					
Totals	98,290,823	91,611,604	18,492,645 11					

Total of Inwards..... 4,032,946
Total of Outwards..... 4,071,391
Vessels of the Inland Waters..... 5,698,095
Grand Total, Inwards and Outwards.... 13,802,432

EXPORTS AND IMPORTS, DOMINION OF CANADA.

Comparative Statement of Value of Exports and Imports, Dominion of Canada, since the Confederation of the Provinces.

Year end'g 30th June.	Total Exports.	Total Imports.	Ent. for Consump.	Duty.	Year end'g 30th June.	Total Exports.	Total Imports.	Ent. for Consump.	Duty.
	$	$	$	$		$	$	$	$
1868	57,567,888	73,459,644	71,985,306	8,819,432	1875	77,866,979	123,070,282	119,618,657	15,361,382
1869	60,474,781	70,415,165	67,402,170	8,298,910	1876	89,966,435	93,210,246	94,733,218	12,883,114
1870	73,573,490	74,814,339	71,237,603	9,462,940	1877	75,875,893	99,327,962	96,300,483	12,548,451
1871	74,173,618	96,092,971	86,947,482	11,846,656	1878	79,323,667	93,081,787	91,199,577	12,795,603
1872	82,639,663	111,430,527	107,709,116	13,045,493	1879	71,491,255	81,964,427	80,341,608	12,039,541
1873	89,789,922	128,011,281	127,514,594	13,017,730	1880	87,911,458	86,489,747	71,782,349	14,138,849
1874	89,351,928	128,213,582	127,404,169	14,421,882	1881	98,290,823	105,330,840	91,611,604	18,500,786

EXPORTS, DOMINION OF CANADA.

Summary Statement of the Value of Exports, the growth, produce and manufacture of the Dominion of Canada, exported during the fiscal year ending 30th June, 1881.

DESCRIPTION.	ONTARIO.	QUEBEC.	N. SCOTIA.	N. BRUN'K.	MANIT'BA.	B. COLUM'IA	P.E. ISL'ND	TOTAL.
Produce of the Mine	$303,293	$466,021	$655,094	$173,008	$767	$1,317,079	$992	$2,916,254
Produce of the Fisheries	128,982	748,053	4,307,068	786,400	3,930	403,170	521,282	6,898,884
Produce of the Forest	6,576,332	12,803,804	1,325,280	4,739,496	.....	162,747	42,189	25,709,848
Animals and their produce	6,903,005	13,695,812	696,056	219,206	600,756	350,615	200,160	22,665,610
Agricultural Products	11,556,581	18,086,198	545,235	173,191	21,367	1,335	910,220	31,294,127
Manufactures	1,373,829	1,637,486	662,630	249,713	1,002	20,620	97,843	4,061,123
Miscellaneous Articles	502,427	151,421	47,175	65,360	.....	187	2,080	768,650
Coin and Bullion	.....	963,000	7,200	.....	725	.....	80	971,005
Estimated am'ts short ret'd	2,670,029	353,293	.....	.....	.....	.....	.....	3,028,322
Totals	30,014,478	48,965,087	8,245,738	6,406,374	628,547	2,255,753	1,774,846	98,290,823

HON. EDWARD BLAKE, LEADER OF THE OPPOSITION, PARLIAMENT OF CANADA.

The Amenities of Home.

I.

DIFFICULTIES IN THE WAY.

THE first thing which should be taught a child is obedience, and after that should come reverence.

It is very hard to teach a child reverence. His parents must be people of remarkable force of character if they succeed in doing so, for the tendency of free institutions on this continent is against him.

The newly arrived immigrant defeats the idea; for he soon learns, as the beginning of his political career, that his vote is as good as his master's—perhaps better. Thus the good old relation between master and servant, of respect on the one hand and help on the other—the best relation for the benefit of home—is uprooted at once.

Almost the first impression on a young child's mind is, perhaps, of the rudeness of a servant to his mother. He sees that her orders are not obeyed, that she is powerless to enforce them. No child likes to obey. He may love his mother—of course he does—better than anything, but when a conflict of opinion comes, he prefers his own will. A strong and conscientious mother will compel her child to obey; a weak and conscientious mother will not be able to do so. He sees that Sarah does not obey, why should *he?* The child goes to school. There he is taught routine, but not reverence. He is not especially reverential to his teachers; nor is he taught that obedience to superior rank or station which is a part of the education of a foreigner.

Therefore he has no inherited nor early inculcated reverence. He has good instincts, he has learned to tell the truth, he is energetic and industrious, perhaps; but a French boy would be shocked at the *manners* of the young American or Canadian son to his mother, even had the boy all the other virtues which he respects. Nothing in this imperfect world is so beautiful as the relation of a French son to his mother. He sees her from his first sentient look the being whom every one in the house adores.

Does the nurse or the maid speak even sharply to the mistress of the house, she is immediately discharged. The child would thus see his mother's authority verified from the first, and, whatever we may say on this side of the water of the marriage relation in France, the master of the house certainly compels a sort of respect from his servants and children toward the mother and mistress of the house, which goes far toward making the manners of a nation respectful and polite.

From the cradle to the grave a French son has one duty, one affection, which is paramount to all others—that is, his love for his mother. As a child, as a boy, he treats her with perfect respect and obedience. As a young man, he delights to send her flowers, to take her to the theatres and cafés. It is a common sight in Paris to see a young man with a gray-haired woman at the public galleries and places of amusement, apparently perfectly happy with each other, the young man studying to make his mother comfortable and amused. Often, in leaving France, a young man asks of his family the privilege of taking his mother with him as his "guide, philosopher, and friend." Before his marriage is arranged, she is his constant companion and his best adviser. Never until death separates them does he fail in his duty toward her; and, after that event has closed this sweet, dutiful history, he keeps the anniversary of her death as his most sacred day, and visits her grave with his children to dress it with flowers.

A young Canadian, of even the kindest heart and manners, seldom treats his mother with much outward attention. He may, if necessary, work for her; he would be shocked if he heard that he had been guilty of any neglect of even the most remote duty to her. But he gives her no *small attentions*, such as sending her flowers, helping her in work, greeting her in the morning, taking her for a drive. Nothing is so rare as to see a young gentleman in attendance upon his mother. Even his manner of speaking to her is harsh and impolite. He goes to her for money, if his father does not give it to him, but he is very indifferent as to his manner of asking for it; he is full of reproaches if she does not give it to him.

The men of this continent respect women in the highest sense, and treat them with all the chivalry possible, as far as immunity from insult is concerned. The national character of the Canadian in this respect is above reproach. But are they at home amiable and polite? Do they treat their wives and daughters or their mothers with constant and daily, and proper politeness? Are Canadian women models in this respect? Do they remember to be grateful, polite, in little matters of salutations and of compliment? Are they careful to be good-humoured, and to bring only an amiable face to the dinner-table?

We are afraid not. The national manners need improving. The amenities of home can alone make up for the national disadvantage. It is at the home dinner-table, by the hearth-stone, the evening fireside, in the nursery, the bed-room and the sick-room, that manners must be taught.

Between parents and children there should never, even with the fondest love, be the slightest relaxation in the matter of a respectful obedience. It is not now, as it was in the days of our own fathers and mothers, the fashion to be formally respectful. The son does not rise when his father enters the room, or stop speaking because his father is speaking. Perhaps it would be better if he did. But he can be taught that he should treat his father differently from other men. He can be taught to rise when his mother leaves the table. He can be taught, by looks rather than by words, to assume a certain respectful tone. Undoubtedly, the harassed and troubled woman of the New World—old before her time; obliged to rush against wind and tide, full of cares which pursue her like scorpions, embarrassed by ill-trained servants—would have a wrinkle less on her forehead, if she could be treated with a little more respect by her sons and daughters; and certainly she would be no less happy if her grown-up son would now and then take her to the theatre or to a picture-gallery, and would not impress it on her mind that she is an old woman, and therefore to be left to the solitude of her own thoughts.

How does her mind go back to those days when she with sleepless solicitude watched his helplessness! How does she think of her patient work by his bedside when he was ailing! Does he ever wish to sit down and nurse her when she is ill? He may say that the affections never go backward; but, at least, he might remember what she has done for him—how she brought home the Christmas-tree, which she decked for him; not forgetting his daily amusements, how she sought to make his life an endless succession of delights; how she wrought, in sickness and in health, at his "little coat," that he might be fine; and how proud she was of him, when, after her teaching, he took the prize at school.

Now, wrapped in his own pleasures, or business, or love, how often does he think of her or her pleasure? Does he try to make her happy *in her own way*—the only way in which we can any of us be happy? No, the son does not treat his mother with much politeness as a general rule; nor do her daughters always err on the side of too much delicate devotion, or err with a too respectful manner.

We have no power to write a counter-irritant to "Daisy Miller," whose mother was the last person to be informed of the engagement of her daughter. There are many mothers who constitute themselves the upper

servants of their daughters, and who consider the daughter as the best judge of her own actions. Such a mother must, of course, take the consequences of her own folly, and bear with whatever sort of treatment her daughter chooses to give her. We can not make them over such unwise mothers.

But for the future there is always hope. We can begin with a young home, a young mother; and from experience, and from the memory of mistakes, we can try to teach a better code, feeling sure that, when mothers appreciate how far-reaching are the amenities of home, they will try to make the nursery the infant school, as the parlour and dining-room should be the college and university, of a new and an improved system of national manners.

II.

A SUBTILE SYMPATHY.

In order to make home happy to a child, he should never be laughed at. The chaotic view of life which presents itself to a child, we can all remember; how we only half understood things, or how we misapprehended them altogether; how formalists wearied us, and gave us texts which we could not remember; and how the hasty and the heartless trampled down the virgin buds of good resolve and of heroic endeavour. Our early heart-breaks are never quite forgotten, nor can we recall them without tears. They are, of course, a part of the forging of the armour. We have to be hammered into shape by all sorts of hard blows before we are good for anything. The only thing we can ask is that the strokes be so well given that we are not bent awry; that the character does not receive some fatal twist from which it never recovers.

"He comes, and lays my heart all heated
On the hard anvil, minded so
Into his own fair shape to beat it
With his great hammer, blow on blow;
And yet I whisper, 'As God will!'
And at his heaviest blows lie still.

"He takes my softened heart, and beats it,
The sparks fly off at every blow;
He turns it o'er and o'er and beats it,
And lets it cool and makes it glow;
And yet I whisper, 'As God will!'
And in his mighty hand lie still."

We are all on God's anvil, to be thus moulded, but, in a lesser degree, our children are in our hands to be shaped into the image of their Maker.

Shall we, in addition to all the sorrows which must come to them later, afflict them in their sensitive childhood with our scorn, our ridicule, or our lack of comprehension?

A child will not, for some inscrutable reason, tell the secrets of its soul. It will not let us know when we hurt it, and how. We must be careful, through sympathy and through memory, to find that art.

One of the most powerful sketches of a child's sufferings is to be found in George Eliot's Maggie Tulliver, in the "Mill on the Floss." Many a grown man or woman, on reading that, has said, "It is a picture of my early sufferings. Poor Maggie?"

A sullen temper gives to a mother an almost incurable obstacle in the way of good manners, and yet a sullen temper is very often an affectionate temper soured.

It pains a mother often after her children have grown up to hear them say that their childhood was an unhappy one; that they were never understood; that she laughed when she should have been serious, and was serious when she should have laughed; that they had terrors by night which she never drove away; and that their mortifications by day were increased by her determination that they should wear broad collars instead of narrow ones, such as the other boys wore, and so on. She can only say, "I did my best, I did my best for you," and regret that she had not been inspired.

But while the children are young, as indeed after they are grown, a parent should try to sympathize with the various irregular growths of a child's nature. Sensitiveness as to peculiarities of dress is a very strong element, and it can not be laughed down. The late Lydia Maria Child said, that she believed her character had been permanently injured by the laughter of her schoolmates at a peculiar short-waisted gown which her mother made her wear to school. And a very sensible mother, who would not allow her little daughter to wear a hoop to a dancing-school, when hoops were the fashion, said that she was certain that, by the mortification she had caused her, and the undue attention which had been given to the subject, she had made love of dress a passion with the child. On all these questions, a certain wholesome inattention is perhaps the best treatment. Try to allow your child to be as much like his fellows as you can; and, above all things, do not make him *too splendid*, for that hurts his feelings more than anything, and makes the other boys laugh at him.

The ragged jacket, the poor shoes, the forlorn cap, the deciduous pantaloon which has shed the leaves of freshness—these are not laughed at; they do not move the youthful soul to ridicule. It is a lovely trait in the

character of boyhood that poverty is no disgrace. But a velvet jacket, a peculiar collar, hair cut in a singular fashion, long hair especially—these are cruel guide-posts to the young bully. He makes the picturesque wearer whose prettiness delights his mother to suffer for this peculiar grace most fearfully.

Little girls, more precocious than boys, suffer, however, less from the pangs of ridicule; yet they have their sorrows. An intelligent and poetical girl is laughed at for her rhapsodies, her fine language, or her totally innocent exaggerations. She gets the name of fib-teller, when she is perhaps but painting a bluer sky or describing a brighter sun than her fellow-beings can see. But a little girl has generally a great deal of vanity to help her along, and much tact to tell her where to go, so that her sufferings are less severe than those of a boy. She gravitates naturally towards the amenities, and, if she is not a well-bred person, it is largely the fault of her surroundings.

III.

EDUCATION AND MANNERS OF GIRLS.

We come now to the subject which perhaps has only remotely to do with the amenities of home, but much to do with the welfare of the state. We must consider the two extremes which are now being brought about by the emancipation of young women. One is, their higher education, the other is, the growing "fastness" of manner.

One can scarcely imagine amenity of manner without education, and yet we are forced to observe that it can exist, as we see the manners of highly educated, and what are called strong-minded women. Soft, gentle, and feminine manners do not always accompany culture and education. Indeed, pre-occupation in literary matters used to be supposed to unfit a woman for being a graceful member of society, but we have changed all that; and we are now in the very midst of a well-dressed and well-mannered set of women, who work at their pen as Penelope at her web.

The home influence is, however, still needed for those young daughters who begin early to live in books; and neatness in dress and order should be insisted upon by the mother of a bookish, studious girl. All students are disposed to be slovenly, excepting an unusual class, who, like the Count de Buffin, write in lace ruffles and diamond rings. Books are apt to soil the hands, and libraries, although they look clean, are prone to accumulate dust. Ink is a very permeating material, and creeps up under the middle finger-nail. To appear with such evidences of guilt upon one would make the prettiest woman unlovely.

The amenities of manner are not quite enough considered at some of our female colleges. With the college course the young graduates are apt to copy masculine manners. This is not graceful, and to some minds would more than balance the advantages of the severe course of study marked out and pursued at college. A mother with gentle and lady-like manners would, however, soon counteract these masculine tendencies and overflow of youthful spirits. We all detest a man who copies the feminine style of dress, intonation, and gesture. Why should a girl be any more attractive who wears an ulster, a Derby hat, and who strides, puts her hands in her pockets, and imitates her brothers's style in walk and gesture?

However, to a girl who is absorbed in books, who is reading, studying, and thinking, we can forgive much if she only will come out a really cultivated woman. We know that she will be a power in the state, an addition to the better forces of our government; that she will be not only happy herself, but the cause of happiness in others. The cultivated woman is a much more useful factor in civilization, than the vain, silly, and flippant woman, although the latter may be prettier. But it is a great pity that, having gone so far, she should not go further, and come out a cultivated flower, instead of a learned weed.

Far more reprehensible and destructive of all amenities, is the growing tendency to "fastness," an exotic which we have imported from somewhere; probably from the days of the Empire in Paris.

It seems hardly possible that the "fast" woman of the present, whose fashion has been achieved by her questionable talk, her excessive dress, her doubtful manners, can have grown out of the same soil that produced Priscilla Mullins. The old Puritan Fathers would have turned the helm of the *Mayflower* the other way if they could have seen the product of one hundred years of independence on the other side of the line. Now all Europe rings with the stories of American women, young, beautiful, charmingly dressed, who live away from their husbands, flirt with princes, make themselves the common talk of all the nations, and are delighted with their own notoriety. To educate daughters to such a fate seems to recall the story of the Harpies. Surely no mother can coolly contemplate it. And the amenities of home should be so strict and so guarded that this fate would be impossible.

In the first place, young girls should not be allowed to walk in the crowded streets alone; a companion, a friend, a maid, should always be sent with them. Lady Thornton said, after one year's experience of Washington, "I must bring on a very strict English governess to walk about with my girls." And in the various games so much in fashion now,

such as skating and lawn-tennis, there is no doubt as much necessity for a chaperon as in attending balls and parties. Not alone that impropriety is to be checked, but that manners may be cultivated. A well-bred woman who is shocked at slang, and who presents in her own person a constant picture of good manners, is like the atmosphere, a presence which is felt, and who unconsciously educates the young persons about her.

"I have never gotten over Aunt Lydia's smile," said a soldier on the plains, who, amid the terrible life of camp and the perils of Indian warfare, had never lost the amenites of civilized life. "When a boy I used to look up at the table, through a long line of boisterous children clamouring for food, and see my Aunt Lydia's face. It never lost its serenity, and when things were going very wrong she had but to look at us and smile, to bring out all right. She seemed to say with that silent smile, 'Be patient, be strong, be gentle, and all will come right.'"

The maiden aunt was a perpetual benediction in that house, because of her manner; it was, of course, the outcrop of a fine, well-regulated, sweet character; but supposing she had had the character with a disagreeable manner? The result would have been lost.

We have all visited in families where the large flock of children come forward to meet us with outstretched hand and ready smile. We have seen them at table, peaceful and quiet, waiting their turn. We have also visited in other houses where we have found them discourteous, sullen, ill-mannered, and noisy. We know that the latter have all the talent, the good natural gifts, the originality, and the honour of the former. We know that the parents have just as much desire in the latter case to bring up their children well, but where have they failed? They have wanted firmness and an attention to the amenities.

IV.

RESPECT FOR THE RIGHTS OF OTHERS.

As boys and girls grow up to manhood and womanhood, parents should respect that nascent dignity which comes with the age—they should respect individuality. It is one reason, perhaps, why sisters cannot always live together happily, that neither has been taught to respect the other's strong peculiarity of character, at least in outward manner. If we treated our brothers and sisters with the same respect that we treat our formal acquaintances in matters of friendship, opinion, and taste, there would be greater harmony in households.

HOME, SWEET HOME.

One of the first and most apparent duties is to respect a seal. Never open your children's letters after they are old enough to read them. It is a curious element of self-respect that this "community of letters" which exists in some families hurts the feelings of a young person from the first. Certain coarse-grained parents or relatives tear open Sam's letters from Dick and laugh at them. Certain other parents consider it a duty to open their daughter's love-letters.

Perhaps in the attempt to keep a daughter from marrying improperly, any kind of warfare is allowable. Extraordinary circumstances make extraordinary precautions proper; but it should be the *last resort*. No girl is made better by *espionage*. If she is a natural born *intriguante*, no *surveillance* will defeat her (we are glad to go out of the honest English tongue to find words to express these hateful ideas). If she is, as are most girls, trembling in the balance between deceit and honesty, a fair, open dealing, a belief in *her*, will bring her all right. Do not set servants to watch her. Do not open her letters. Do not spy on her acts or abuse her friends. She will be far more apt to come right if she is treated as if she were certain to be true, frank, and honourable in all her acts.

As for young boys and men, belief in their word, confidence in their honesty, is the way to make them honourable gentlemen. Be careful, as we have said before, not to laugh at them; respect their correspondence. If the rough-and-tumble of a public school is to be their portion, there is no fear that the amenities of home will make them effete. They will need all their polish as they go knocking through the world.

A husband should never open his wife's letters, or a wife her husband's. All people have their individual confidences which each is bound to respect. A woman of large sympathies and wise thoughts, of virtuous life and clear head, is sure to have considerable correspondence. Many weaker people write to her for advice, consolation, and help. It is an outrage upon their belief in her if her husband reads those letters. The correspondent is not telling her secrets to him. If a wife is carrying on a love affair, her husband may be quite sure that he will be baffled; therefore his jealousy will not be gratified on opening her letters. Still less should a wife open her husband's letters. But we are not in the days of Othello and Desdemona, nor are we dealing with passions and jealousies; we are not treating with such questions as these. We will end this by repeating the old adage that "a seal is as strong as a lock." If the opening of letters is a fact which is treated carelessly in many families, it becomes a part of that thoughtless disregard of individuality which is remotely so much the cause of unhappiness at home. "Did we but think," says the

careless person. Exactly! "Did we but remember." Yes! To think, to remember, to consider the claims of all about us, particularly at home, is the beginning of "the amenities."

One should be particular about paying small debts to members of the family. Tom borrows car-fare from Dick and forgets to return it. Sarah borrows a dollar from Louisa and forgets to return it. Then come recriminations and strife. There should be, in the first place, an effort to avoid borrowing. Nothing is so good for children as to give them a small money allowance, and to insist upon its lasting. It teaches them economy and thrift. If this is possible, then instruct them in the impropriety of borrowing and the necessity of prompt payments. Of course this is all a part of the theory of respecting the rights of others. We are none of us too old or too perfect to be beyond instruction in this matter.

And, in the education of the young, parents should encourage individuality. They should not try to smoothe off their children to a dead level of uniformity. If Flora can draw, put a pencil in her hand and encourage her. If Lucy can write, give her plenty of foolscap. If Bob wants to go to sea, let him strive to fit himself. If Arthur is a natural orator, bring him up for the law. If Charles is devotional, strive to fan the flame which may make him a preacher. If Herbert has a tendency to save his pennies, try in the first place to make him philanthropic, so that he will not end in being a miser; but let him be educated to business. If Peter shows a decided taste for art, by all means cultivate it. We need artists in Canada, and they are no longer struggling visionaries.

Our education of girls tends chiefly toward making them admirable figures in society, and to a certain extent this is right. But, if she has nothing behind that worldly training, the young girl is apt, after a short worldly experience, either to violently react and to hate it all; she either grows morbidly sensitive to opinion, or she stagnates into conventionality —either of which extremes should be avoided. There is no sadder sight than to see our young women growing up with no high aims or thoughts to guide them. Society is her power. She is the future regenerator, the preserver of society. If her aims are high and pure, society will be high and pure.

The sudden accession of wealth should not make people less well-mannered. The pursuit of wealth is no doubt very destructive to good manners; but when it is won, as it now is by so many on this continent, should it not bring back all those amenities, as we are bringing back the brocades, the bureaus, the old clocks, and the carved mantelpieces of our Canadian forefathers? We are beginning to find out that they built better

houses in olden times than we do; that they had more elegant interiors; that their fireplaces are things to copy; that there is no such furniture as their claw-footed mahogany chairs. And we should remember that the manners of those pretty great-grandmothers of ours, whom Copley painted, were as well worth our copying as are the chairs in which they sat or the fireplaces which they looked at.

The picture of the old-time lady sitting in her parlour, to receive the hand-kiss from her sons and the respectful submission of her daughters—such a one of whom her son said, "You can not imagine my horror when I once believed, the next morning, that my mother had seen me drunk"—the dignified matron, who still, in her early morning deshabille, which was as neat and pretty as her afternoon silk was elegant, attended her household duties, and taught her children the secrets of cookery; she who was from youth to age a pattern of dignity and the domestic virtues, she—is a vanished picture.

The rich *parvenu* society, which, like a mushroom growth, follows suddenly-acquired wealth, is now apt to be exceedingly fast and utterly rowdy. Here and there, persons of native refinement and an intuitive sense of the becoming, endeavour to stem the tide; but feebly, for the tides of fashion are like those which pour into the Bay of Fundy, irresistible, carrying all before them on their tremendous waves. Fastness and fashion and folly are cumulative, and, if one woman makes herself noticed by eccentric defiance of what was once considered decency, another, a thousand others, follow in her wake, thinking that this defiance is the thing. One beautiful "fast" woman who succeeds makes a hundred converts.

V.

THE MODEL GIRL.

"I AM so glad I have no daughters," said a leader of society; "for what should I do with them? I should not wish to have them *peculiar* girls, dressed differently from their mates, or marked as either bookish girls, or prudish girls, or non-dancing girls, or anything queer; and yet I could never permit them to go out on a coach, be out to the small hours of the night with no chaperon but a woman no older than themselves. I could not allow them to dance with notorious drunkards, men of evil life, gamblers, and betting men; I could not let them dress as many girls do whom I know and like; so I am sure it is fortunate for me that I have no daughters. I could not see them treat my friends as so many of my

friends' daughters treat me—as if I were the scum of the universe. I am glad I have no daughters; for a modern daughter would kill me."

Perhaps this lady but elaborated the troublesome problem which has tried the intellects of all observant women—how to make the proper *medium girl*; not the "fast" girl; still again, not the "slow," dowdy girl; not the exceptional girl, but the girl who shall be at once good and successful—that is the question?

The amenities of home, the culture of the fireside, the mingled duty and pleasure which come with a life which has already its duties before its pleasures—this would seem to make the model girl. The care and interest in the younger sisters and brothers; a comprehension and a sympathy with her mother's trials; a devotion to her hard-worked father; a desire to spare him one burden more, to learn the music he loves, to play to him of an evening; to be not only the admired belle of the ballroom, but also the dearest treasure of home; to help along the boys with their lessons, to enter into those trials of which they will not speak; to take the fractious baby from the patient or impatient nurse's arms, and toss it in her own strong young hands and smile upon it with her own pearly teeth and red lips; to take what comes to her of gaiety and society as an outside thing, not as the whole of life; to be not heartbroken if one invitation fail, or if one dress is unbecoming; to bear the slight of no partner for the German with a smiling indifference; to be cheerful and watchful; to be fashionable enough, but neither fast nor furious; to be cultivated, and not a blue-stocking; to be artistic, but not eccentric or slovenly; to be a lovely woman whom men love, and yet neither coquette nor flirt—such would seem to be the model girl.

And it is home and its amenities which must make her. School can not do it; society can not and will not do it; books will not do it, although they will help.

And here we have much to say on the books which should surround a girl. We must seek and watch and try to find the best books for our girls. But we can no more prevent a bad French novel from falling into their hands than we can prevent the ivy which may poison them from springing up in the hedge. The best advice we can give, is to let a girl read as she pleases in a well-selected library; often reading with her, recommending certain books, and forming her taste as much as possible; then leaving her to herself, to pick out the books she likes. Nothing will be so sure to give a girl a desire to read a book as to forbid it, and we are now so fortunate in the crowd of really good novels and most unexceptional magazines which lie on our tables that we are almost sure that her

choice will be a good one; for she can find so much more good than bad.

It is unwise to forbid girls to read novels. They are to-day the best reading. Fiction, too, is natural to the youthful mind. It is absurd to suppose that Heaven gave us our imagination and rosy dreams for nothing. They are the drapery of fact, and are intended to soften for us the dreary outlines of duty. No girl was ever injured, if she were worth saving, by a little novel-reading. Indeed, the most ethical writers of the day have learned that, if a fact is worth knowing, it had better be conveyed in the agreeable form of a fiction. What girl would ever learn so much of Florentine history in any other way as she learns by reading "Romola?" What better picture of the picturesque past than "The Last Days of Pompeii?" Walter Scott's novels are the veriest mine of English and Scotch history; and we might go on indefinitely.

As for studies for girls, it is always best to teach them Latin, as a solid foundation for the modern languages, if for nothing else; as much arithmetic as they can stand; and then go on to the higher education and the culture which their mature minds demand, if they desire it and are equal to it.

But no mother should either compel or allow her daughter to study to the detriment of her health. The moment a girl's body begins to suffer, then her mind must be left free from intellectual labour. With some women brain-work is impossible. It produces all sorts of diseases, and makes them at once a nervous wreck. With other women intellectual labour is a necessity. It is like exercise of the limbs. It makes them grow strong and rosy. No woman who can study and write, and at the same time eat and sleep, preserve her complexion and her temper, need be afraid of intellectual labour. But a mother must watch her young student closely, else in the ardour of emulation amid the excitements of school she may break down, and her health leave her in an hour. It is the inexperienced girl who ruins her health by intellectual labour.

To many a woman intellectual labour is, however, a necessity. It carries off nervousness; it is a delightful retreat from disappointment; it is a perfect armour against *ennui*. What the convent life is to the devotee, what the fashionable arena is to the belle, what the inner science of politics is to the European woman of ambition, literary work is to certain intellectual women. So a mother need not fear to encourage her daughter in it, if she sees the strong growing taste, and finds that her health will bear it.

But we fear that certain fashionable schools have ruined the health of many a girl, particularly those where the rooms are situated at the top of

a four-story building, as they generally are. A poor, panting, weary girl mounts these cruel steps to begin the incomprehensibly difficult service of a modern school. "Why do you never go out at recess?" said a teacher to one of her pupils. "Because it hurts my heart so much to come up the stairs," said the poor girl. "Oh! but you should take exercise," said the teacher; "Look at Louisa's colour!"

That teacher knew as much of pathology as she did of Hottentot; and the pupil thus advised lies to-day a hopeless invalid on her bed.

VI.

THE MANNERS OF YOUNG MEN.

But, if the amenities of home are thus hopefully to direct our daughters in the right way, what will they do for our sons?

Of one thing we may be certain, there is no royal road by which we can make "good young men." The age is a dissolute one. The story of temptation and indulgence is not new nor finished. The worst of it is that women feed and tempt the indulgence of the age. Women permit a lack of respect. Even young men who have been well brought up by their mothers become careless when associating with girls who assume the manners and customs of young men. And when it is added that some women in good society hold lax ideas, talk in *double entendre*, and encourage instead of repressing license, how can young men but be demoralized?

If women show disapproval of coarse ideas and offensive habits, men drop those ideas and habits. A woman is treated by men exactly as she elects to be treated. There is a growing social blot in our society. It is the complacency with which women bear contemptuous treatment from men. It is the low order at which they rate themselves, the rowdiness of their own conduct, the forgiveness on the part of women of all masculine sins of omission, that injures men's manners irretrievably.

Fast men and women, untrained boys and girls, people without culture, are doing much to injure modern society. They are injuring the immense social force of good manners. Women should remember this part of their duty. Men will not be chivalrous or deferential unless women wish them to be.

The amenities of home are everything to a boy. Without them very few men can grow to be gentlemen. A man's religion is learned at his mother's knee; and often that powerful recollection is all that he cares for on a subject which it is daily becoming more and more of a fashion

for men to ignore. His politeness and deference are certainly learned there, if anywhere. A mother must remember that all hints which she gives her son, as to a graceful and gentlemanly bearing, are so many powerful aids to his advancement in the world. A clergyman who did not approve of dancing still sent his son to dancing-school, because, as he said, he wished "him to learn to enter a drawing-room without stumbling over the piano.

The education of the body is a very important thing. The joints of some poor boys are either too loosely or too tightly hung, and they find it difficult to either enter or leave a room gracefully. "Don't you know how hard it is for some people to get out of a room after their visit is really over? One would think they had been built in your parlour or study, and were waiting to be launched," says Dr. Holmes. This is so true that one almost may suggest that it be a part of education to teach a boy how to go away. The "business of salutation" and leave-taking is really an important part of education.

One great argument for a military exercise is that it teaches the stooping to stand up, the lagging to walk, the awkward to be graceful, the shambling to step accurately. Lord Macaulay in his old age wished that he had had a military training, as he "never had known which foot to start with."

There are some persons born into the world graceful, whose bodies always obey the brain. There are far more who have no such physical command. To those who have it not, it must be taught. The amenities of home should begin with the morning salutation, a graceful bow from the boy to his mother, as he comes into breakfast.

And table manners, what a large part they play in the amenities of home! A mother should teach her boy to avoid both greediness and indecision at table. He should be taught to choose what he wants at once and to eat quietly, without unnecessary mumbling noise. Unless she teaches him such care early, he will hiss at his soup through life. She must teach him to hold his fork in his right hand, and to eat with it, and to use his napkin properly. If Dr. Johnson had been taught these accomplishments early, it would have been more agreeable for Mrs. Thrale. Teach your boy the grace of calmness. Let the etiquette of the well-governed, well-ordered table be so familiar to him that he will not be flustered if he upsets a wine-glass, or utterly discomposed if a sneeze or a choking fit require his sudden retreat behind his napkin, when, after he leaves you, he essays to dine abroad.

Nothing is better for the practice of the amenities of home than a rigorous determination to dress for dinner. This does not mean that we should be expensively or showily dressed, but that every member of the family should appear clean and brushed, and with some change of garment. A few minutes in the dressing room is not too much of a tax to even the busiest man, and he comes down much refreshed to his meal.

A lady hardly needs any urging on this point; but, if any one does need urging, it is certainly worth mentioning.

Several years ago a growing family of boys and girls were taken by their parents, who had experienced a reverse of fortune, to the neighbourhood of the oil-wells to live. It was about the time they were growing up, and their mother was in despair as she thought of the lost opportunities of her children. Nothing about them but ignorance. No prospect, no schools, no anything. But in the depth of her love she found inspiration.

Out of the wreck of her fortunes she had saved enough to furnish parlour and dining-room prettily, and to buy a few handsome lamps. Books were there in plenty, for old books sell for very little; so she had been able to save that important factor of civilization.

Every evening her lamps were lighted and her dinner spread as if for a feast; and every member of the family was made to come in as neatly dressed as if it were a party. The father and mother dressed carefully, and the evening was enlivened by music and reading.

She attended to their education herself, although not fitted for it by her own training. She did as well as she could. She taught them to bow and to courtesy, to dance, to draw, to paint, to play and sing; that is, she started them in all these accomplishments. In five years, when better fortunes brought them to the city again, they were as well-bred as their city cousins, and all her friends applauded her spirit. This was done, too, with only the assistance of one servant, and sometimes with not even that.

It required enormous courage, persistence, and belief in the amenities of home. How many women, under such doleful circumstances, would have sunk into sloveliness and despair, and have allowed their flock to run wild, like the neighbouring turkeys!

There is great hope for country children who are surrounded by a certain prosperity and agreeable surroundings. They see more of their parents than city children can; and perhaps the ideal home is always in the country. Those small but cultivated Canadian villages, those inland cities, those rural neighbourhoods, where nature helps the mother, where the natural companionship of animals is possible for the boys, and the

pony comes to the door for the girls; where water is near for boating and fishing, and in winter for the dear delights of skating—such is the beautiful home around which the memory will for ever cling. The ideal man can be reared there, one would think—that ideal man whom Richter delighted to depict, one whose loving heart is the beginning of knowledge.

We could paint the proper place for the ideal man to be born in, if, alas! for all our theories, he did not occasionally spring out of the slums, ascend from the lowest deeps, and confute all our theories by being nature's best gem, without ancestry, without home, without help, without culture.

The education of boys in cities is beset with difficulties; for the fashionable education may lead to self-sufficiency and conceit, with a disdain of the solid virtues; or it may lead to effeminacy and foppishness —the worst faults of a Canadian. These two last faults are, however, not fashionable or common faults in our day. There is a sense of superiority engendered in the "smart young man," so called, which is very offensive. All snobs are detestable; the Canadian snob is preëminently detestable.

A young man of fashion is apt to get him a habitual sneer, which is not becoming, and to assume an air of patronage, which is foolish. He has a love for discussing evil things, which has a very poor effect on his mind; he has no true ideas of courtesy or good breeding; he is thoroughly selfish, and grows more and more debased in his pleasures, as self-indulgence becomes the law of his life.

His outward varnish of manner is so thin that it does not disguise his inner worthlessness. It is like that varnish which discloses the true grain of the wood. Some people of showy manners are thoroughly ill-bred at heart. None of these men have the tradition of fine manners, that old-world breeding of which we have spoken. They would be then able to cover up their poverty; but they have not quite enough for that; and they truly believe—these misguided youths—that a rich father, a fashionable mother, an air of ineffable conceit, will carry them through the world. It is astonishingly true that it goes a great way, but not the whole way.

No youth, bred in a thoroughly virtuous and respectable family, grows up to be very much of a snob, let us hope. Alas! he may become a drunkard, a gambler, a failure. And then we come up standing against that great cruel stone wall, that unanswered question, "Why have I wrought and prayed to no purpose?" And who shall answer us?

It is the one who sins least who is found out, and who gets the most punishment.

There is a pathetic goodness about some great sinners which they never lose. We love the poor fallen one whom we try to save. Never are the amenities of home more precious, more sacred, more touching, than when they try to help the faltering, stumbling footstep, to hide the disgrace, to shelter the guilty, to ignore, if possible, the failing which easily besets the prodigal son; to welcome him back when society has discarded him; to be patient with his pettishness, and to cover his faults with the mantle of forgiveness: all these are too tragic, too noble, too sacred for us to dilate upon. They are the amenities of heaven.

Society makes no explanations and asks none, else we might ask why some men and women are tolerated, and why others are cast out? Why some young man who had once forgotten himself after dinner is held up to scorn, and why another is forgiven even through the worst scandal? Why is injustice ever done?

Many a young man, having experienced injustice at the hands of society, goes off and deliberately commits moral suicide. The conduct of society is profoundly illogical, and we can not reform it.

VII.

CONSIDERATION FOR EACH OTHER.

Too great care can not be taken in the family circle of each other's feelings. Never attack your brother's friend. Remember that if we are at all *individual* we can not like the same people, see the same resemblance, or enjoy always the same book. Temperaments differ. One feels a draught and wishes the window shut while another is stifling with heat. Were we among strangers, we should simply bear with the draught or the heat without speaking. At home it grows into a quarrel.

"I am so glad Louisa has gone away, for now I can shut the window," said a sister once, who found it so impossible to live with her family that on coming into her property she very wisely took a house by herself. Perhaps they could not live in the same atmosphere.

Great care is necessary in remarks about looks. Never tell people that they are looking ill. If they are sensitive, as most people are about their health, the information that they look ill will make them worse. The questions and the searching glance of a kind mother will have to be borne, for she is the natural custodian of the health of her family; but even that annoys most people. A due regard for the feelings of her family will teach her, in nine cases out of ten, to hide the anxiety she may feel.

Cheerfulness is very necessary in the family. If a person is really ill, we shall find it out soon enough. If he desires sympathy he will come for it, but if he is really ailing, and desirous of concealing it, we should respect his secret, not strive to worm it from him. Many people are made ill by being told that they are ill. An invalid once said that the sunshine had all been taken out of his morning walk by the lugubrious looks of a friend, who shook his head, and said, "My dear fellow, I must confess that you are looking very badly." But there is a class whom Molière has painted in the "Malade Imaginaire," who desire nothing more than to be considered ill, who are always looking for sympathy and flattery.

The amenities of home should surround the real invalid with flowers, sunshine, agreeable company, if it can be borne, and variety. It is often that the sick-room of some confirmed sufferer is the most cheerful room in the house. If there is a pretty new thing in the possession of any member of the family, it finds its way to patient Helen's couch. If there is a new book, it goes to her to have its leaves cut; and if any one has a song or story, how quickly it ascends to that person! "I never knew how happy a home I possessed until I broke my leg," said a young man, to whom a broken leg was a fearful interruption to business and pleasure.

Remember always to give a sick person what variety you can command.

Some sufferers from fever require to have the pictures changed on the wall. Some invalids, who are prisoners for years in a room, are better for a new wall-paper or a new carpet. Nothing can be so grateful as a country prospect of wood and water, hill and dale, the sky at morning and at evening. The city is a hard place for the chronic invalid who can see nothing but the opposite row of houses. However, the scene may be varied by the presence of birds and flowers; and a well-bred, favourite dog, particularly a big one, is a great help.

The amenities of the sick-room and the proper management of it are subjects which have, however, been so well treated by Florence Nightingale and others, who have made them a study, that they seem hardly a part of our little treatise.

The mistress of a house should never reprove her servants at table or before her assembled family. It destroys many a meal at home, and drives young men to their club, if their mother insists upon using her voice loudly in reproving a refractory servant. No doubt she is often tempted; no doubt it is very necessary; no doubt it requires an angelic patience to refrain. But she should refrain; she should be angelic. Let the man drop the plates; she must be "mistress of herself, though China fall!" Let the

maid come in with bare, red arms and a frowsy cap; the mistress must bear it all in silence, nor seem to see it, however dreadful it may be. Then let her descend upon the faulty one, and, in the retirement of the front basement, have it out with her.

Some women have a gift at training servants which is like the talent which generals have in handling an army. They can, by their own personal magnetism, make a servant refrain from clattering plates. Others have no such gift. They are from first to last the slaves of their servants, afraid of them, and unable to cope with them. "Oh! that I could make a request which is a command as you do," said one of the inefficient to the efficient.

It is, perhaps, a talent which can not be learned; certainly, after many failures, we do not wonder that the women who can not manage servants give up housekeeping, and go to the hotels and boarding-houses. A model hostess is said to be one who has a knowledge of the world that nothing can impair, a calmness of temper which nothing can disturb, and a kindness of disposition which can never be exhausted. Now, that is rather an unusual character. A hostess should certainly have self-control, and should not reprove her servants before company. She should have tact, good-breeding, and self-possession. Even then she may not have the talent to create good service out of the raw material—the clay which Ireland sends to her. She can only suffer and be silent.

We have spoken of the impropriety of attacking our brother's friends. If we can not like them, we can refrain from knowing them intimately; but let us always also refrain from speaking ill, or "making fun" of those persons who are liked by other members of the family. There are some families—not the happiest ones—where this is done constantly. If Edmund likes Jack, who is peculiar, William and Susan make all manner of "game" of Jack, and he is thus excluded from the house. Edmund hesitates to invite him, as he knows he will be pained by these ill-natured comments. Certain families have a sort of acrid disagreeability, which they call wit, which overflows in this way, and which makes home anything but a happy place.

Young people are little aware how badly they appear as satirists. They do not know enough, as a general thing, to satirize wisely. It takes a great and learned person to do that. Young persons should be optimists, and should admire rather than condemn. They should learn that cultivated persons rarely have to resort to such weapons as coarse censure and crude ridicule. And, even if in the height of good spirits and youthful fun, they feel like ridiculing the friend whom their brother has chosen,

let them make the case their own, and try to imagine how they would like to hear their own favourite friend abused.

Long arguments are very unwise, and almost always lead to harsh, unpleasant feeling. If there is a difference of religion in the family, it should never be spoken of at table. Many a youthful convert to some other creed has been driven from home by the thoughtlessness and unkind remarks of his family. The subject of religion should be rarely or never introduced between more than two talkers. The expressions of even earnest believers are necessarily so vague that the conversation can rarely do any good; and it is far wiser for the youth to go alone to the clergyman whom he selects, or to talk to his father, mother, or chosen friend on this most important of all subjects. Still better is it to take prayerful counsel of his own heart. Never make it dinner-table talk; for it either becomes flippant and irreverent, or it leads to violent quarrels and sometimes to deadly hatreds.

A difference of political sentiment also is dangerous to the amenities of home. Brothers had better not indulge in much discussion in the family circle. They can not feel as coolly to each other as ordinary disputants—that is impossible. They can only differ, and often quarrel. The few who, in the familiarity of home, can coolly argue are indeed very few.

The wise and learned Phillips Brooks says truly, "Familiarity does not breed contempt, except of contemptible things or contemptible people." This is very true. But we must remember that familiarity does take off the outer cuticle, and leave us very defenceless. We are not the same strong-handed, steel-visaged personages to our own family that we are to the outer world. They know us too well, and we know them too well. We are fighting without gloves with our own people. The bitterness and hurt of a family quarrel is a proverb.

Never interrupt each other. Let each speaker have his five minutes, and say out his say. There are some people so notoriously ill-bred in this way that they are nuisances in their own houses. They talk on—on—on, and notice the speech of others not a jot. Others interrupt when one has begun a sentence, and have no sort of regard for the fact that even the lady of the house has been trying to make a remark for some time. Hesitating, slow talkers are very apt to be ruled out by fluent ones. Other people have a deliberate intention of spoiling a story or an epigram by sailing in across the bows of another; and a still more reprehensible class lead up the conversation to a *mot* or an anecdote which they wish to tell. It is a great sin against good-breeding to interrupt a person who is making a remark or about to make one, or to speak before he has quite fin-

ished. The slow talker usually has something very good to say, and the word which he is trying to find is worth waiting for. The fast and flippant talker sweeps all before him with his weak diaphanous discourse. No one is much the wiser for his deluge of words; the better thought is however, washed away, and the slow talker is driven from the field.

Brilliant talkers have very great temptations in this way. Not only is the thought pressing for utterance, and the word dancing on the end of the tongue, but the talker also knows that a laugh will follow and his *mot* will be appreciated. There is no such immediate and dear applause as that which follows a ready talker, and no wonder that he finds it hard to be a good listener.

However, to be a good listener is a most graceful gift—particularly to a good talker. It is such an act of self-sacrifice! Those brilliant "flashes of silence"—how much they cost the ready-witted talker! Yet it is to him a greater art than to talk well, for it calls on him to repress his own seething speech, and to hear somebody say badly what he would say so well.

The good listeners are very popular. They can, even if they have nothing to say, still promote conversation; and a good listener who looks amused seems to carry on the conversation. He knows the specialty of his friend, and can wind him up and set him going; and if he is an unselfish good listener, he will put in, here and there, the necessary short speech which is just what the talker needed.

Many families have wit and the "give-and-take" of conversation, and so supplement each other admirably. Many families of brothers and sisters keep the table in a roar by their felicitous remarks, their happy quotations, and their delicate and spicy remarks on current events. They agree as well in conversation and are as harmonious as when they are singing. But there are others where a disregard for the rights of conversation spoils the amenities of the dinner-table, and where one over-argumentative brother, or one disputatious sister, or a father who overrides all his children and talks while they are talking, or a mother who has no talent for listening, will destroy the pleasure of the table, of the evening fireside talk, and make home a place to be deliberately avoided.

"I wish our home would burn up," said an unhappy boy, who could not see any other way out of his domestic misery, and who perhaps intended by the light of that corrective fire to run away to parts unknown.

VIII.

THE FIRST ENGAGEMENT.

It is pleasant to turn to one of the brightest chapters of the amenities of home and consider that pleasant episode of home life "the first engagement."

When it is an arrangement which satisfies prudent papa and mamma, this is the most delightful moment of mature life. It makes one young again to see the happiness of two young lovers. "All men love a lover." The introduction of a new son or daughter—that deep feeling of rest that our son or daughter is to have the anchorage of marriage—these are delicious reflections. We forget our trials, our cankering cares, we forget that they, too must fight the same hard battle of life which we have got nearly through, and we see only the blissful side of the picture. If, however, we do not entirely approve, it is a great duty, and one which we owe our children, to hide from them any fancied antipathy to the chosen one whom we may not wholly love. Given good principles and good education, good health and a moderate certainty of a future living, and no parent has a right, if his child is sincerely attached, to find fault with his or her choice.

Of course, no mother ever saw any wife quite good enough for her son; no father imagines that the man can be born who is worthy of his daughter. Sometimes, without meaning it, this feeling will show itself; but it had much better be kept out of sight, if possible.

Either a family should take a girl wholly to their hearts, and treat her as their own daughter, or they should decidedly disapprove from the first. No mutilated courtesy, no half-handed generosity, no carping criticism is just or honourable. That their son loves her, wishes to make her his wife, should be a very unanswerable argument for her hearty adoption into the family. And with regard to a daughter's husband the same, and even greater respect should be shown. The old reproach against mothers-in-law now rather relegates itself to old comedy; it is not believed that they are always so detestable as the "Campaigner" in "Pendennis."

Yet a mother-in-law should let her sons-in-law severely alone, nor dare, because she has a very near relationship to him, to interfere in the household authority, or to say disagreeable things about the education of the children.

The young girl who enters a large family as the betrothed of one of the brothers has a very difficult roll to fill. Unless she is frank and sincere,

unless she is very engaging, she is apt to be disliked by some of them. Perhaps the brother has been a great favorite, and some loving sister is jealous of her. Some brother, even, may feel offended at having the affections of his most intimate friend stolen away from him; or the charms which have won the lover may not be apparent to the rest of the family.

Now is the time for good-breeding. Now is the moment for the *amenities*. Let the young people remember to treat that young lady with peculiar courtesy, for she will never forget their conduct at this period. She is to be their sister for all time. If they treat her with respect and cordiality, ten to one she will be a good sister. But, if they treat her with hatred, suspicion, and dislike, she will be their enemy all her days—and very little blame to her if she is. It is the cruelty of the red Indian to treat a newcomer, introduced under such tender circumstances, with anything but kindness.

Canadian marriages, being for the greater part purely marriages of affection, ought all to be happy. That a great majority of them are so we firmly believe. The world is, however, not yet paradise, and there is an occasional failure. A man, even the most sagacious, does get taken in occasionally, and a woman now and then makes a poor choice. Then, when father and mother read Edmund's unhappiness in his pale face and saddened brow, what are they to do?

Nothing. We must bear the sufferings of our children, as we should do our own, silently, although they hurt us infinitely more than our own have done. And in that new relation we must bring the most perfect breeding to our aid, trying to make politeness take the part of love.

No one feels interested in our failures, in our quarrels, in our diseases, or in our disappointments. We must "consume our own smoke." No one will care to hear that we dislike our daughters-in-law or disprove of our sons' wives. The family record should be a sealed book, of which the most prudent member keeps the key. We have no chance, in these days of newspaper notoriety, to hide from the world what we do; but we have the power to keep our thoughts to ourselves. Our births, deaths, engagements, marriages, and visits to our friends are all public property, but our opinions are still our own, unless we choose to tell them.

We can not expect of our daughters-in-law and sons-in-law that they will be always patient with us, nor can we ask it. They may find our demands upon our children exacting. They may find our ways old-fashioned and uncongenial; therefore it is a dangerous experiment to take them home to live. Jane may want a fire in her bed-room when her mother-in-law considers a fire unnecessary, and damaging to the new carpet. A

young woman, accustomed to the lavish attendance of her own servants, may enter a family where the service is limited, and her laces, carelessly thrown into the wash, may be brought back by a sad-looking mamma, who assures the extravagant daughter-in-law that she keeps "no fine washer and ironer."

These pin-pricks and small worries are what make up life. And in nine cases out of ten they so disturb the harmony of daily life that the experiment of living together fails utterly. Who can say, with any certainty, that any two tempers will agree? Still less half a dozen tempers.

The first year of married life is a very trying thing. No two young people would ever wish to live it over again. They have got to become accustomed to each other. They must conquer self. They must begin to live dually. It is a hard lesson to learn. "Far from wondering that marriage is sometimes unhappy, I wonder always that any two people can live together," said an English divine, who has thoroughly understood human nature.

After the illusions of first love must come the sober fact that all life is not to be passed in honeymoons; that we have married mortals, not demi-gods or demi-goddesses, and that the future, however much it may be illuminated by the light of a sincere affection, is to be a scene of perpetual self-sacrifice.

The happiness of marriage depends upon the very highest and most delicate of reserves; of the most flattering and careful speech; of the best and most honourable perception; upon a kindness greater than that of a mother to her child; and upon a thousand physical causes. Nobility of sentiment is born of love, and is the delightful accompaniment of married love, even in the most low-born brute. Even Bill Sykes had his moments of tenderness for the poor wretch who loved him so well, and whom he murdered. Women remember these traits, and forget the brutality. The devotion of a woman to a drunkard is not remarkable, for, of all men, drunkards are sure to have sensibility. But in the every-day marriage, between two well-behaved and well-intentioned persons, the danger of losing that first aroma of devotion is very great, for the cares of daily life are very *désillusionés* (we have no English for that); and unless people are desirous to keep the flame alight it soon smoulders and goes out.

So much for the happiest marriages, What, then, of the unhappy ones? Where tempers are wholly incompatible, where tastes differ, where two beings find that they have put their necks into a yoke which galls both; when we find that the companion of a lifetime is disagreeable to every feeling and sense, that we can not treat each other with justice, because

all our worst antipathies are unconsciously aroused by the being whom once we loved—what then ?

If left alone, particularly if there are children, people sometimes continue to "agree to disagree" very amiably ; but if they are surrounded by their relatives—never.

What unhappy wife would not go at once to her father and mother and complain ?

How could they help sympathizing ? And then the cord is broken. The moment the domestic question is carried up to a higher court, the first judge retires, and will have no more to do with the case. A man never forgives this appeal. No wonder a man in such a case hates his mother-in-law ; for, if he had been alone on a desert island with his wife, they might have fought it out, kissed, and became friends.

So there is great reason for not taking the young couple home. If they quarrel, the partisanship of either side will never be forgiven by the other side. Matrimonial quarrels, therefore, to be curable must be confined to the high principals. There are, of course, people in this world great and good enough to live with others, to "live at home"; but they are very few.

IX.

A PROFESSION FOR OUR SONS.

Chancellor Kent said, in his wise way, that the citizen who did not give his son a profession or a trade was wronging the state. Every one must have something to do. The idle man is a dangerous man. It is a pity that every boy can not learn a profession and a trade. In the troublous times which we have just gone through we have seen how much better it was to be a shoemaker than to be a lawyer. The professional men nearly starved.

Madame de Genlis said that she knew seventy trades by any one of which she could have earned a living. She taught the sons of Philip Egalité to make shoes, pocket-books, brooms, brushes, hats, coats, and all sorts of cabinet-work. She taught them literature, science, and music; had them instructed in watch-making and clock-making, and even in the arts of killing and cutting up a sheep. They found many of these resources valuable in exile; and it is strange that it has not occurred to those who have boys who are not princes to do the same. A boy could learn to be a carpenter while preparing for college, and could study his Latin, Greek, and Mathematics with a better brain for the exercise.

It is to be regretted that gentlemen's sons deem certain trades beneath their notice. For all labour is honourable, and all can not succeed as lawyers, doctors, clergymen, or merchants. There is great need of the handicraft so honourably considered in the middle ages. Every gift bestowed upon us by Providence, whether of mind or body, is a talent to be grateful for. Arthur can write verses; Jack can cut down a tree; Sam can reason; Edmund can do a sum; Peter can measure and saw boards; Henry can tame animals and make all nature his tributary; James likes to sit and work at some thoughtful, sedentary task; Horatio is speculative, active, courageous—he aims to be a broker. Alas! they *all* aim at being bank clerks or finding employment in some money-making employment.

In the forming of character, the father and mother should try to make headway against this mistake, that to rush headlong into money-making is the end of life. A boy should be taught to respect the day of small things; to work honestly for every dollar he gets; and to let that dollar represent something given back for the worth of it. It would be a very good thing for all young Canadians if there were a law that they should enter no profession or business until they had proved that they could earn their living by their hands.

Casimir Périer said, when accused of being an aristocrat: "My only aristocracy is the superiority which industry, frugality, perseverance, and intelligence will insure to every man in a free state of society; and I belong to those privileged classes of society to which you may all belong in your turn. Our wealth is our own; we have gained it by the sweat of our brows or by the labour of our minds. Our position in society is not conferred upon us, but purchased by ourselves with our own intellect, application, zeal and knowledge, patience and industry. If you remain inferior to us, it is because you have not the talent, the industry, the zeal or the sobriety, the patience or the application, necessary to your advancement. You wish to become rich as some do to become wise, but there is no royal road to wealth any more than there is to knowledge."

These are sentences which should be engraved on the walls of every college and school-house. Young men should learn to look to the patient labour as their lot in life. The feverish and sudden success of a few, wrecks a thousand yearly.

"There is Charley, who has made his pile," as Canadians say, "in six months. Why should I work all my life for what he gains in half a year?" asks visionary and lazy Fred, not counting the thousand failures in business, including failures to be honest.

There is, however, of late a growing taste for agriculture in our country which is most hopeful. The earth owes us all a living, and if we will "tickle her with a hoe she will laugh with a harvest."

There is now living in Manitoba a young farmer who went from the ranks of a fashionable career right into the fields. Inheriting a farm which was worth nothing, unless he worked it himself, he determined to study scientific farming at an agricultural college in Guelph, and came home armed with useful knowledge and with practical ideas. He had learned to be a very good blacksmith, carpenter, saddler, and butcher—for a farmer should know how to mend his farm-waggon, stitch his harness, shoe his horse, and kill his calves—according to the economical Old Country fashion.

And he had great good luck, this young farmer, in that he found a wife who, like himself, had been reared in "our best society," but who was willing to leave all for his sake, and to learn to pickle and preserve, to bake and brew, to attend to the dairy, and to get up at five o'clock in the morning to give her working husband his breakfast, and he learned that,

"He who by the plough would thrive,
Must either hold himself or drive."

So this jolly farmer is always at it, and drives his team afield himself at daybreak.

The old farmers wonder, as they see this handsome young fellow, beautifully dressed, on Sunday, driving his pretty wife to church, that he can make more money than they can. His butter is better, and brings more a pound; his wheat is more carefully harvested; his breed of pigs is celebrated; his chickens are wonderful—for the books tell him the best to buy. He has learning and science to hitch to his cart, and they "homeward from the field" bring him twice the crop that ignorance and prejudice draw.

Above all, he is leading a happy, healthy, and independent life. To be sure, his hands are hard and somewhat less white than they were. But polo and cricket would have ruined his hands. His figure is erect, and his face is ruddy. He has not lost his talent in the elegant drawing-room, but can still dance the German to admiration. He is doing a great work and setting a good example; for he is, as we Canadians say, "making it pay." To be sure, he has a great taste for a farmer's life. No one should go into it who has not. But what a certainty it is! Seed-time and harvest never fail.

It would seem, while there is so much to be done on this continent with her railroads, oil-wells, mines, farms, and wheat-fields, her numerous industries and requirements, that no man need be poor. Our sons can find something to do, something to turn a hand to.

The teaching of home should be in this particular age of the world to inculcate "plain living and high thinking" in our sons. That is what they need to be great and good men, and useful citizens.

X.

PROFESSIONS FOR WOMEN.

If the commercial distress which visited this country between the years of 1873 and 1879 had brought us no other benefit, amidst the vast deal of suffering and ruin which occurred to a people who had been living too fast, it did this immense good: it taught women that they could work and could earn money. It has been no uncommon thing for the wife and the sister to support the family during those dreadful years, now happily past.

Men are broken and discouraged when the ordinary business of their lives fails them. They have not the versatility of women, they have not woman's hope. It probably seemed to many a ruined father that there was little hope in the accomplishments of his daughter. She could paint a plaque very prettily, perhaps write tolerable poetry; "but that would not pay the butcher." The fact remains that it did pay the butcher. One delicate woman during these dreadful years has supported seven men—seven discouraged, ruined, idle men, and she has done it very well too.

The Decorative Art Society could tell a very good story of woman's work, and the sister societies for the aid of women have a noble record on their books. Wood-carving, embroidery of a very high class, drawing, painting, music-teaching, authorship, engraving on wood and modelling, are all now well and profitably done by women. To be reporters for newspapers, law reporters in the courts, and even lawyers and doctors are also added on.

The training-schools for nurses have opened a new and beneficent field for the cultivated, conscientious girl, who is willing to devote herself to the care of the sick. She can now do her work under a certain direction of the law and authority, which give it dignity. To be an artist, and a successful one, is a career which is opening more and more to women. To paint, to illustrate books, to give fresh ideas to the world with her brush

is a noble career for any young woman. It requires talent, patience, enormous industry, and some courage, to endure jealous criticism.

The quarrel in Edinburgh respecting the female doctors, and the opposition everywhere to the entrance of women upon men's chosen fields are fresh enough in the memory of our readers. We need not enter upon this subject here.

Women of heroic force have great difficulty in finding their places in the world. They are too active, too full of the unrest of genius, to be always happy at home; the great woman is, when young, like the ugly duckling. She does not please her mother or gratify her sisters. She does not like to go to parties—society bores her. She may not be pretty; if she is, she does not care for compliments. If a great philanthropist, like Florence Nightingale or Sister Dora, is being developed for the use of the world, ten to one this particular bird is too large for the nest, and discomfits all the rest.

A woman of literary gifts, like Miss Martineau, who is being brought up to plain sewing, and who has to come to her real work through much family strife and contention, is no doubt very disagreeable and troublesome to those who have no strivings, no immortal fire to take care of. Such women generally leave a record of much suffering, of early injustice, of the unkindness of relatives, behind them, and claim that, had they been treated better and better understood, they would have been finer characters and more useful to their day and generation.

There is no doubt of the fact that a narrow-minded mother has often ruined the development and the usefulness of her gifted daughter. She least of all comprehends the child who, though her very own, has all the qualities of another race. It once gave a very good mother the most acute pain because her daughter threw an apple-paring into the fire exactly like her aunt Clarissa. "What do you want to do that for, exactly like your aunt?" was the angry question. Aunt Clarissa was the father's sister, and particularly disagreeable to the mother. It was a perfectly honest and irresistible disgust. We can imagine how much more powerful it would be if carried beyond apple-parings.

A young artist in Paris, who made a good living for her mother and sister, declared with tears that she had never been forgiven by either of them for deserting her sewing-machine for the palette, and it was evident that she was not clear in her own mind as to whether she had not disgraced herself.

These are instances of narrowness happily conspicuous, and we hope few. But should not parents deeply consider them, and ask themselves

if they have a right to interfere with the chosen vocation of a daughter, even if it does seem to them to be eccentric? We know a mother who aimed at social distinction and a rich marriage for her daughter, who was so disgusted with her for choosing to become a doctor that she fell ill and would not allow her to care for or nurse her.

"Perhaps you had better try homœopathy, and take the cause of your disease as your cure," said her family physician.

"No, never. I would rather die than be cured by Helen," said the offended mother.

She lived to forgive Helen, who now supports her, and she is in excellent health and spirits at sixty-five. Probably Helen therefore knew best what was good for her.

But it is an unlucky thing for the amenities of home when the daughters are so strongly disposed to leave the ordinary walks of every-day feminine duty. The happiest women are those who can lead the ordinary life, be amused by society, dress, and conventionalities, and who can be early married to the man of their choice, and become in their turn domestic women, good wives and mothers. There is no other work, no matter how distinguished, which equals this. But, if this life does not come to a woman, and certainly it does not to a very large number, there can be no doubt of the propriety of a woman's finding her own sphere, her own work and her happiest and most energetic usefulness.

Anything can be forgiven of a woman except a career of vice or vanity, or the wretched numbness of inaction. No woman should insult her Maker by supposing that He made a mistake in making her. A morbid or a useless woman was not contemplated in the great plan of the universe. She has always a sphere. If home is unhappy beyond her power of endurance, let her

> "Go teach the orphan boy to read,
> The orphan girl to sew."

Let her learn to cook, bake, brew; let her adopt a profession—music, possibly—and work at it. Let her go into a lady's school and teach. Let her keep a boarding-house, paper walls, hand pictures, embroider, dust, sweep, become the manager of a business, do anything but sit down and mope, and wait for something to turn up. Many a pair of unhappy old maids are now dragging out a miserable existence in a second-class boarding-house, turning their poor little bits of finery, who might, if they had been brave in their youth, have won a large *répertoire* of thought and a comfortable competency. But they preferred to keep alive one little corner of pride, and that has been but a poor fire to sit by to warm their thin hands

—hands which should not have been ashamed to work, hands which would have been whiter for honest efforts.

The prejudice against literary women has so much disappeared that it requires no word of encouragement now to women to try literature as a means of getting a living. Indeed, so many more try writing than have the gift for it that it would perhaps be wise to recommend a great many to try anything rather than that.

To write well must be in the first place a gift; all have it not. To be sure, it also requires will, persistency, and the most enormous industry. No one ever wrote well who had not gone through many an hour of pain, disgust at the work, and a crucial test of the hard labour that is to bring from the brain its purest gold. But even the industrious can not always write; and if a woman does not write well she generally writes very poorly. She can not do machine work as well as a man can. Therefore, if she have no inspiration, she had better throw down the pen.

Women, by reason of their health, are sometimes debarred from taking up any very exacting out-of-door work. This was, in the opinion of an Edinburgh surgeon (the particular enemy of Miss Jex Blake), an unanswerable argument against their becoming physicians and surgeons. The fact remains that they have become both. Therefore, we can never say what a woman can not do.

We could hardly train our daughters to be car conductors, soldiers, or police-officers, the three trades which are always thrown in the face of woman's suffragists; but it remains to be seen why they should not play in orchestras, become jewellers and watch-makers, wood-carvers, and internal decorators, that branch of household art now so fashionable and so profitable.

One energetic woman in France has made a large fortune by raising hens and chickens. Another in the west is a good practical farmer, taking care of ten thousand acres, and making money surely and rapidly. It will repay all women to inquire what were Madame de Genlis' seventy trades, and which one, or two, she will learn.

There is another reason for learning a trade or an accomplishment, and that is for the pleasure which it gives to an otherwise idle lady. Many a woman, after her children are married, finds herself with days to get rid of which have no possible pleasure in them, Her occupation is gone, and she needs the help of something to carry off weary, unprofitable hours. She generally, in these days, takes to painting plaques, and plates, fans and reticules—which is very good as long as it lasts. It does not last very long to a woman of active mind. She needs to throw in charities and outside

THE MARQUIS OF LORNE, EX-GOVERNOR-GENERAL.

action, to organize new schemes, and to help along church and school. To unmask abuses, to do that work in a great city which otherwise goes undone; that is part of a good woman's work, which may amply repay an hour's thought.

The scheme for Protestant sisterhoods, which is looked upon with alarm by many most thoughtful people, as opening a door for that purposeless conventual seclusion and life of imprisonment and ritualistic mummery in which we Protestants do not believe, has grown out of the necessity which unmarried women feel for a vocation.

There can be no harm in the institution of Protestant sisterhoods so long as the sisters take no positive vow. It will not hurt women to enter a religious house, work under a lady superior in instructing the ignorant, raising the fallen, helping the poor, so long as they do not lock the door on themselves and give the key into another hand. There is no one who can be trusted with the custody of our liberty but ourselves. A clergyman may be a very good man, but he is still simply a fallible man; and he may mistake very much his duty when a Protestant sister tells him that she desires to leave her work if he tells her that she can not. She may know very much better than he. It is all very well to bind one's self to a good work for a year or two years, that there may be consistency in the enterprise; but a longer or a final term is not consistent with that freedom which God has given us.

XI.

THE INFLUENCE OF AGED PEOPLE.

THERE is no *genre* picture so ornamental to the fireside as an old lady with grey curls. Home should alway contain a grandmother, old aunt, or some relative who has seen the world, lived her life, and who is now waiting gently for the news which came to Christiana in the "Pilgrim's Progress," meantime taking a pleasant interest in the little tragedy or comedy of every-day life, and being the particular providence of the younger children. Such an old lady is as agreeable as she is ornamental. So important is the respectability of a virtuous ancestor to the *nouveau riche*, that Dickens says, in his immortal way, of the Veneerings, "that, if they had wanted a grandfather, they would have ordered him fresh from Fortnum's and Mason's. He would have come round with the pickles."

A grandfather is a very useful article, whether to quote from or to enjoy daily. An agreeable old man is the most delightful acquisition to any

society. It is, perhaps, one reason why the English dinner-table is so pre-eminently agreeable, that old men keep themselves so very fresh, healthy, youthful in feeling, while they are, of course, full of the results of experience. A man in England at sixty-five has not allowed himself to grow careless of dress or appearance. He is not sunk in the apathy or preoccupation of old age, even at eighty. To keep himself *au courant* with the excitements of the hour has been his rule through life. We who live must live every hour. We must cultivate those who are younger as a weary traveller stoops to drink of the fresh spring which bubbles up at his feet. It will not do for us to seal up in a bottle the wine which was good when we were young, and drink only that; we must go ever to the fresher vineyards. It is not given to us all to remember a kindly grandfather; but, to those who can do so, it is the most agreeable perhaps of childhood's memories.

The lovely old lady is a great treasure in a household, has often agreeable accomplishments in the way of needlework and knitting, has a perfect store of excellent recipes for cakes and custards, and knows the most delightful old-fashioned games of cards. She has manners, too, learned in a better school than ours. She is stately, courteous, a little formal. She makes a beautiful courtesy. She tells us how she was taught to do "laid work," to sew furs, to conserve currants, to sit up and not touch the back of her chair. Her figure shows that a good spine is the result of her early training. She is the one who is never tired of the society of the growing girls, and who has at twilight the prettiest stories of the time when she was a young lady and Grandpapa came a-courting. It seems, seen through the tender light of tradition, as if those were more romantic days than ours. No doubt she has treasures of old lace and brocade, which come out for dolls' dresses and pincushions. She is very apt at Christmas-tide to produce unexpected treasures. To comfort and encourage the faltering, fainting mother when the new cares of maternity seem almost beyond her strength, who so invaluable as the old lady? To soothe the boys and girls when the business of life has removed for a moment their immediate guardian, who so nice as Grandmamma?

For young fathers and mothers have their own lives to live. They must be excused if they wish to go to dinners, and parties, and to Europe without the children. Indeed, while the husband is making the fortune, and the wife is keeping house, and living out the business of youth, it sometimes seems a pity that the bearing of children should be thrown in. An English economist gravely proposed that children should be born to the old, who have gotten through with wishing to live, and who would be very

much amused with the business of the nursing, all other business having ceased to amuse them.

Young people have a deal else to amuse them, no doubt, and a family of children often seems a great bother to them; but the fact remains that they are ordained to cope with this particular business, and they alone have the strength to bear with the ceaseless activity of childhood. Children after a time fatigue the old.

The other side of the picture is this, also. Old people are not always agreeable, particularly old men, in a household. Grandpapa may be very gouty and very cross, very unreasonable in his requirements, and uncertain as to his hours. He may rap an unwary urchin over the head before he knows it with his cane, and come down severely on the subject of the girls' new dresses. If Grandpapa holds the purse-strings, he is a terrible power. It is not often, however, that rich old men are disobeyed or neglected. Human selfishness is too wary.

Old men generally are not so agreeable in a household as old women. They are caged lions, if disease has crippled them; they torment themselves and those with whom they live; they feel the deprivation of that power and that importance which once made up their lives. They have never, perhaps, cultivated the domestic virtues.

So much the better for the amenities of home if the household bear all this with patience, and all try to remember all that Grandpapa did for them when he was young and strong. No matter what are the disagreeable traits of the old, we must bear them upon our young and strong backs. It is one of the privileges of home that we can do this duty, and help old age to bear its sorrows. How manifold are those evils—the loss of sight, the loss of hearing, the aggravation of the nerves, the rheumatic pains!

Dr. Johnson, in the "Rambler," says: "A Greek epigrammatist, intending to show the miseries that attend the last stage of man, imprecates upon those who are so foolish as to wish for long life the calamity of continuing to grow from century to century. He thought that no adventitious or foreign pain was requisite, that decrepitude itself was an epitome of whatever is dreadful, and nothing could be added to the curse of age but that it should be extended beyond its proper limits."

"It would be well," says Colton, "if old age diminished our perceptibilities to pain in the same proportion that it does our sensibilitees to pleasure, and, if life has been termed a feast, those favoured few are the most fortunate guests who are not compelled to sit at the table when they can no longer partake of the banquet. But the misfortune is that body and mind, like man and wife, do not always agree to die together. It is bad

when the mind survives the body, and worse still when the body survives the mind; but when both these survive our spirits, our hopes, and our health, this is worst of all."

Many old people who come upon their middle-aged children for support and consolation have reached the latter condition. And no doubt they are a very heavy burden. Many an ill-tempered old person has ruined the life of a devoted son or daughter. But the duty remains. It is one which must not be shirked, even if it descends to a grand-daughter. Little Nell did her duty, and only her duty.

It has remained for Dickens to depict, as only he can, the burden of unjust and wicked parents upon virtuous children, Indeed, he has been blamed for grinding up his own father in paint, and therefrom constructing the characters of Turveydrop, Mr. Dorrit, and Mr. Micawber. One can but feel regret that a youth such as Dickens passed had eradicated much that was delicate and desirable in the way of reticence. Yet the world needed the lesson. There are depths in the heart of man which can only be reached by such revelations: and we can but hope that some thoroughly selfish and unworthy parents have read and profited by these lessons; that a Turveydrop may have seen himself, and have ceased to live on his children; that a Dorrit may have been ashamed of his pretence and turgidity; a Micawber, more lovable than the others, have been aroused from his worthless dreams!

Severity and censoriousness in the old alienate youthful affections, and the old should constantly bear in mind that, if they would keep the affections of their descendants, they must cultivate amiability. As Dr. Johnson says, to again quote his wise words: "There are many who live merely to hinder happiness, and whose descendants can only tell of long life, that it produces suspicion, malignity, peevishness, and persecution; and yet even these tyrants can talk of the ingratitude of the age, curse their heirs for impatience, and wonder that young men can not take pleasure in their father's company.

"He that would pass the latter part of his life with honour and decency must, when he is young, consider that he shall one day be old, and remember when he is old, that he has once been young. In youth he must lay up knowledge for his support when his powers of acting shall forsake him; and in age forbear to animadvert with vigour on faults which experience only can correct."

Those who are endeavouring to make home happy, and who are baffled by the peevishness of an old person, must try to strengthen themselves in the good work by every argument in favour of old age, making every ex-

cuse for it; and, if all other arguments fail, must constantly say to themselves, "I shall one day be old; let me treat my aged relatives as I hope that my children may treat me."

Home should indeed be a "blessed provision" for the aged. Whether they are those healthy, agreeable old people who have laughed at time, those whose unique privilege it has been to stand erect under the burden of eighty years, or those whom time and circumstance have crippled and cast down, home is their place, and it should not be in our hearts to consider them as a burden.

XII.

THE CAPABILITIES OF HOME EDUCATION.

"THE methods of education should be such as to guide and balance the tendencies of human nature, rather than to subvert them."

Mothers must all agree that the best part of edueation is that which children give themselves in a happy, healthy, not too formal home. The education of a child is principally derived from its own observation of the actions, the words, the looks, of those among whom it lives. The observation of children is keen and incessant. They are always drawing their own conclusions. These observations and conclusions have a powerful influence in forming the charaeter of youth. What you tell them they are very apt to receive with suspicion. Seeing is believing.

"How do you know that that is *A*?" said a rather irreverent pupil to his teaeher.

"Why, because I was taught so!"

"Well, who taught you?" returned Johnny.

"My teacher, a very good old man," said the poor schoolmistress, pointing to the first letter of the alphabet.

"Well, now, how do you know but that old man lied?" returned the imperturbable John.

The teacher was nonplussed. At last she thought of a happy way out of her diffieulties.

"You watch the other boys, Johnny, and see if they think it is *A*; if they do not, you may believe that it is *B*."

The great letter proved to be *A* to John's satisfaction, after he had taught *himself* that it was likely to be it. A matter of self-acquisition, treasured up and reasoned upon, with collateral testimony brought to bear, which grew stronger as Johnny advanced in literature, made *A* to Johnny a fact. It was no fiction of learning which his natural enemies were forc-

ing upon him; but, his native shrewdness having found them out to be correct on this one important fact, he believed them in future, and accepted B and C as parts of a system, occult and difficult to remember, but still as facts.

We must remember, when in the first youthful ardour of our systems and schemes of education, that costly apparatus and splendid cabinets have no power to make scholars. The little scholar says to his teacher, "Will you tell me what time it is?" as he looks at the clock. "No," she should say; "I want you to tell *me* what time it is."

In a half hour the most slow and unimpressionable boy can learn to tell time, and so on. His books and teachers must be his helpers, but the work must be his. As Daniel Webster said: "A man is not educated until he has the ability to summon in an emergency his mental powers in vigorous exercise to effect its proposed object. It is not the man who has read the most or seen the most who can do this; such a one is in danger of being borne down like a beast of burden by an overloaded mass of other men's thoughts. Nor is it the man who can boast merely of native vigour and capacity. The greatest of all warriors who went to the siege of Troy had not the preëminence because Nature had given him strength, and he carried the longest bow, but because self-discipline had taught him how to bend it."

It is this power of raising a boy's mind to the ability to work for itself which is the highest achievement of education, and mothers are sometimes inspired with it.

And, as curiosity is the first feeler which the youthful brain puts out, the mother should be very patient in answering questions. This is, perhaps, the hardest trial which a mother has to meet. To answer the questions of a tireless crowd of children is enough to drive a nervous woman insane. But, as long as her strength lasts, she must try to do it, and as long as she knows what to say. When they begin with those unanswerable questions upon theology which they always ask, and which she can no more answer than they can, then she must stop.

"Mamma! why did God make the devil if he didn't want any evil in the world?"

"I do not know, my dear; you must ask your father," has been said to be the most powerful lecture upon woman's cunning and man's limitations which was ever preached.

Curiosity being once excited, the field is ploughed, and the seeds of learning can be dropped in. Unhappily for the poor boy, he has got to learn many things by rote—the multiplication table, the spelling-book,

the Latin grammar; he must be taught that dreary grind which we call *formula*, in order that he may have a mental tape-measure to go by hereafter.

But just as little should be taught by rote as possible, especially what the child does not understand. It cripples the mind, while it helps the memory. Original thinkers have never been able to learn much by rote.

We must remember that education is like the grafting process, and there must be some affinity beween the stock and the graft if we wish to get good fruit. Even if it were desirable, it is very poor work to try to obliterate natural tendencies, and make the tree grow artificially. We want, while we are grafting our young tree, and cutting off the unnecessary shoots, to preserve the fine original flavour of the fruit which God gave it, which we did not make, and can only help it to mature and ripen; fortunate if, in our blundering ignorance, we do not injure rather than improve it.

We should teach our children to communicate to us their thoughts and inclinations with perfect freedom, so that we can guess what their minds are leading to. We can thus help them on their favourite road toward any art or science to which their talents tend. We have to contend morally with the habitual reticence of childhood; but intellectually, if not repressed or frightened, childhood is frank.

In teaching anything, as little as possible should be taught a child at once. No wise mother gives her child a half-dozen dishes to eat at once. She respects his stomach. Why not have the same regard for his brain?

In this, we are making the mother the teacher. We are speaking of the capabilities of home, which is to be opposed to the very injudicious tendencies of the average school, an institution in which most mothers who look back upon an extended experience usually unite in decrying. Even Dr. Arnold, of Rugby, who was the model school-master, says, "A great school is very trying. It never can present images of rest and peace; and when the spring and activity of youth are altogether unsanctified by anything pure and elevated in its desires, it becomes a spectacle that is dizzying, and almost more morally distressing than the shouts and gambols of a set of lunatics."

The trouble with many of our schools is simply this: they are money-making institutions only. Hard teachers, bad air, and the forcing system, so that the master may have a showy examination, that is all. Oh! what distorted spines, what fevers, what curious diseases, what wrath, what confusion, what despair, have not been born in a fashionable school! It is dreadful to think of the tasks which are imposed. And yet it is not

within the capabilities of home to do without a school-training, especially for boys. They must go to encounter the hard lessons which are to prepare them for life. To learn their kind, to get rid of morbidity, school is necessary.

It is fortunately within the capabilities of home to smooth the path of the suffering boy or girl who has to know everything.

"The school-boy knows the exact distance to an inch from the moon to Uranus," says Dickens, who had the liveliest horror of a school, and the most active sympathy with school boys. "The school-boy knows every conceivable quotation from the Greek and Latin authors. The school-boy is up at present, and has been these two years, in the remotest corners of the maps of Russia and Turkey, previously to which display of his geographical accomplishments he had been on the most intimate terms with the whole of the gold regions of Australia. If there were a run against the monetary system of this great country to-morrow, we should find this prodigy of a school-boy down upon us with the deepest mystery of banking and the currency."

It is this cramming system, this illy digested and cruel *quantity*, which is killing our boys, disgusting them with the word *learning*, and which turns our colleges into lounging-places for the lazy, where clubs are formed, and where a "dig" is looked down upon as a low fellow. It is against this false system that all the powers of home should be arrayed.

We fear that the teachers of girls are very seldom guided by any definite principles in educating the feelings and the intellect of their pupils. The power of self-control is not sufficiently dwelt upon; the power of reflection, of looking inward, of gaining self-knowledge in its true sense, is left to be the growth of chance. The purely intellectual faculty, the power of comprehension, instead of being constantly employed upon objects within its grasp, is neglected in order to overload the memory. Women should be taught to think, to be logical, to bring themselves to reason where they only feel; to study abstract justice (a quality a woman seldom if ever possesses): it is a necessity.

Much may be said of the capabilities of home education for a girl with governesses. We are not rich in that staple English article; but there are good governesses to be found.

It is a question, however, whether or no we do not deprive a girl of much that is afterwards agreeable in her life in not sending her to school. She ought to know other girls and to measure herself with them. Youthful friendships are the strongest; and we would not like to relinquish that bond. How much more of evil she will learn than of good in a

mixed boarding-school remains an unanswered question. Most people after careful inquiry are brave enough to send their daughters to a boarding-school; and there are some schools which are so admirable that they can certainly do our daughters more good than harm.

The public school is no doubt a better place for the acquirement of knowledge than the private school. It is a procrustean bed, but it certainly produces good scholars.

XIII.

MAKING HOME ATTRACTIVE.

THERE are few women who do not try for this, and few women who, trying, do not succeed. The poorest woman can now with very little money make a pretty room, and save it from the lonely, sordid, or conventional look of a room in a boarding-house. She can avoid horsehair sofas and violent carpets, *chargés* frescoes, and vulgar prints on the walls. Good engravings, a little cretonne, some knick-knacks made by herself, a few grasses, a growing plant, and an open fire are all that are needed to make a room pleasant and refined.

What a pity it is that in a country covered with wood, a wood fire should be an expensive luxury, for there is nothing like it to make home attractive! It burns up many a quarrel and morbid speculation, rights many a wrong, and promotes peace. No picture is so utterly cheerful as that of the family gathering round it as evening falls. No conversations are so fresh and witty as those which go up with the sparks. No companion is so lively and invigorating to the invalid, the recluse, the mourner, or the aged as a wood fire. It is the most healthful of all ventilators, the most picturesque picture, the most enlivening suggestion of energy and thrift. It is the most fragrant bouquet, the most eloquent of orators. It is a story-teller to the fanciful, and a juggler to those who love the marvellous. What fairy tales does it not tell with its sparks on the back of the chimney! What combinations of initials it presents to the lovers, who read "A" and "E" mysteriously combined in a true-lovers' knot, written in fire, as is their love! What strange shapes the logs take to those who intrust their fortune-telling to its mystic revelation! What dreamy fancies go up in the smoke.

Nothing is so healthful as a wood fire in a sick-room. Certain physicians say that it will cure some diseases. In cities, however, we have nothing to take its place but cannel coal, which make a bright and lively fire, and

which is the next best thing to the wood fire, and which should be used in every living-room.

What a fine old-fashioned distinction that is, by the way, the *living-room*! As if the rooms kept for company were dead rooms, rooms full of ghostly furniture, kept for show, and of cold and fearful aspect. In a true home every room should be a living-room. We should live all over our houses, have nothing too fine to use. Of course the nursery should hold the young destroyers, until they know what not to break, if that knowledge ever comes. But, to a trooping set of happy boys and girls, the house should be open and free.

Each person will find his sanctum, of course, and every one should, if possible, have a room to himself. There should be some place for those who must work to retire to, where solitude would be possible. But the dining-room, the library, and the parlour should be cheerful and orderly, and always lighted up by some constant and familiar presence. Somebody should be there to welcome the wanderers, to greet the stranger, and to gather the children together as a hen gathers her chickens under her wings. This person is generally the mother, who is the core of home.

It is this hour of reunion, this happy hour by the wood fire, which pays her for all her work, all her trials. If she can see her group passing into a respectable manhood and womanhood, if she can see happy, honest, hopeful, industrious sons, and blooming, modest daughters, she compounds with the past for all its pains, its desperate despair, its hard usage of herself. She does not mind her altered face and figure, the gray hair, the age which has come too soon. Her work is done, she has made a happy home, and its fruit is before her intact.

Even if she has failed in her loftiest ambitions, even if she has not made heroes of her sons, or eminent women of her daughters, let her be grateful that she has done no worse. Let her be grateful for the strength which has not failed her at the death-bed of her lost ones, that has not given out in the darkest hour, that has sustained the falling, animated the discouraged, and kept that sacred flame alight on the hearthstone which will in future years be the altar fire in all who remember her. The true home is that where there have been sorrow, self-sacrifice, struggle, renunciation, courage, heroism; and happy are they who have through all discouragements preserved it.

The valuable influence of sisters in a family of brothers, can not be too strongly emphasized in the subject of the amenities of home. Not only do they or should they give a feminine refinement to the house, but the very duty which they have the right to require of their brothers, those acts of

personal attention and gallantry, the accompanying of them to parties and to theatres, and the instinct which makes them their sisters' most chivalrous defenders, all go far toward making them gentlemen. It is the sister's fault if she is not a refining and a corrective influence in her brother's life. In this day of mannish young girls it is to be feared that she is not altogether as universally so as she should be; but a sister should strive for that position. She should strive for her brother's affection and confidence and should endeavour to enlighten them upon the character of girls whom they may marry. She knows them, and men can not know the characters of women as another woman can.

The refining influence of young girls upon young boys has led many thoughtful persons to advise the establishment of mixed schools, where the sexes may meet, as in the home circle, for mutual improvement. It certainly improves the boys. They are more anxious to be clean, to brush their hair, to have better manners at table. Whether it is so good for the girls remain to be proved. It is doubtful if the young people should be exposed to the early temptation of falling in love while the severe business of study is being required of them.

To make home happy when there is even one nagging, hateful, unjust person in it, one who is full of small unamiabilities, one who will take the blower down from the fire when another has put it up, who will angrily shut a window when another has thrown it open, who will study to put out lights which have just been carefully lighted to enable a person to read, and so on—the list is a long one—is a difficult matter. Injustice and petty tyranny go a long way toward ruining the character of children, and those who grow up in a house where the father has always been unjust to their mother, those who see him doing these little things daily to make her uncomfortable, have little chance of becoming cheerful and good members of society.

"That remembered bitterness has coloured my whole view of human nature," said a man of fifty years of age, as he spoke of the treatment which his mother had received at the hands of his father, from the dressing of a salad up to the education of the children. But women can bear it, and should do it for the children's sake. The idea of home is worth it all and she who does bear it is one of God's saints and martyrs.

So with an unworthy mother. The father and the children should combine to cover up this most radical and thorough disintegration of home. It is touching to see some young girl rising like a delicate flower, which seeks to become a tree, that it may give shelter and food and rest to those who cluster beneath its shade. A woman in making a good home shelters

not only her own, but the houseless children of less worthy women. How many friendless boys there are in the world who come gratefully to such shelter! How many a sick and weary pilgrim, deserted by those whom he has trusted, floats into this safe harbour! Every member of a happy household goes out into the world to find these waifs, whom he brings home to the family table and the family protection. It is one of the best privileges of home to the benevolent, this power of doing all the good which thus accidentally comes in one's way.

Many a young man living forlornly in lodgings has been saved from fatal illness and despair by the kind interposition of some family who have found him out and have taken him home, who have nursed him in illness, encouraging him to hope and to recover. Many a house becomes a "home for the friendless" in this way. Certainly a noble hospitality.

It is not the richest house which is the most hospitable; so no one need be discouraged in the attempt to be hospitable by want of money. It is charming to one's self-love to have a well-furnished house, a French cook, and a beautiful dinner service, a butler and fine wines, and to ask one's friends to come to excellent dinners, to see how well we live. But those of lesser means have the power to give, and to exercise the true spirit of the most sincere hospitality without these adjuncts.

Home, being a strong background, should not be carelessly used to give a factitious respectability to those who are unworthy. Women of large hearts sometimes do this wrong to the world. In their earnest desire to help the unfortunate, they take in a person of uncertain character, and launch upon the world an adventuress or a rascal. "He or she has Mrs. So and So's indorsement; he has lived in her family." This has started many a specious vagabond in society. This looseness of goodness has done much harm. Of course, we can not help being sometimes deceived ourselves, but we can help being culpably careless.

Much of this kind of patronage undoubtedly springs from a love of approbation, which is a poor motive. People like to patronize and to be looked up to; they like to hear themselves spoken of as being generous, noble, and hospitable. The flattery of those whom we have rescued from a doubtful position is sweet, in vast contrast with the utter want of gratitude which often comes to us from those who owe us everything. We do not always receive the praises due to us for the work we have really done, and the heart of woman craves praise. Glad is she to get it, even from the unworthy.

But here the hospitable heart should stop and ask herself these questions: "Is my motive in taking in this woman purely generous and

sincerely kind? Do I know her well enough to make her a member of my family? Have I a right to give her the prestige of my name and family, which she will receive if known as my *protegée?*"

We have dwelt but little on the duty which every head of a family owes to herself, her family, and the outside world, in allowing no scandal to be talked at her table or by her fireside.

The character of some houses in this respect is fearful. "Ye who enter in, leave all hope behind"; for your flesh will be pecked from your very bones. Some families have a keen wit, impinging tempers, sharp speech, and an omnivorous appetite for unhandsome traditions of their neighbours. They batten on human character, and to dilate upon the many stories which float around concerning everybody is their best amusement. A "*mauvaise langue*" is a fearful gift. It makes a woman powerful but hated. "She is a great gossip, she is a talker," is the worst of all reputations in a neighbourhood.

It is difficult for the mother of bright and witty young people to keep them from the over-exercise of their tongues. They catch the grotesque and funny side of things intuitively. They are not too particular as to what they say of their companions; and there is nobody who can not be ridiculed. Therefore they grow into scandal-mongers innocently at first, and regard the amusement of making people laugh at their friends as an element of being agreeable. This grows into bitterness, and the attributing of ignoble motives as they grow older, on the part of those who find life disappointing, and whose experience does not tend to soften them. Therefore a rule, formed early in life, to not speak ill of anybody, no matter what the provocation, would be most useful and beneficent.

Children and young people should be warned against the dangers of mimicry. It is an amusing but a dangerous gift; and he who cultivates it will sooner or later get into difficulty.

"Whatever tends to form manners or to finish men has great value. Every one who has tasted the delights of friendship will respect every social guard which our manners can establish tending to secure us from the intrusion of frivolous and distasteful people. The jealousy of every class to guard itself is a testimony to the reality they have found in life. When a man once knows that he has done justice to himself, let him dismiss all terrors of aristocracy as superstitious, so far as he is concerned."

Every mother should put a "social guard" around her home. She can not be too particular as to the acquaintances whom her daughters may select as their intimate friends; and she should cultivate politeness.

"Politeness is the ritual of society, as prayers are of the Church, a school of manners, and a gentle blessing to the age in which it grew. Indeed, some good people classify politeness as one of the seven cardinal virtues. It certainly keeps us from doing many ungracious acts. The good manners of those who have no training must be in native goodness of heart, which is the secret of all true politeness; but very few people can always trust to that instinct. If they are trained to an habitual politeness, the result is most favourable. It inculcates self-restraint, and, although there may be the vices of a Chesterfield under the polish, the polite person saves the feelings of his intimates, and keeps them from losing their temper at the brutality of bad manners. It was sensibly urged by an *ouvrier* in the French Revolution, that he preferred "the tyranny of the aristocrat to the tyranny of the mob; for," said he, "I like better the tramp of a velvet slipper on my foot than the kick of a wooden shoe,"

No creature is all saint and no creature all sinner. A mother, a teacher, a preacher, must remember this, and do the best that can be done to make out of the people around one amiable members of society.

We live in a time of great thoughts, in which much is said and done for the instruction and elevation of mankind. It is the philanthropic age; the whole sentiment of reforming the masses belongs to our day. When we reflect upon how much has been done by men and women like ourselves, we can not despair, but still hope that we may do something towards it ourselves.

But still it may not be within our power to do more than to make one happy and useful home. Let us remember, if we do that, we have helped to swell the class of the *well-bred*, whom one day we hope may predominate over the ill-bred.

"Good manners are the shadows of virtues, if not the virtues themselves." "Company manners," so called, are therefore better than no manners at all. They are not as good as home manners, real manners; but they may work inwardly. We sometimes gain the real virtue which we have only affected.

Idleness has no place in the model home. Be indefatigable in labour, and teach your children to work. The earnest worker finds opportunity and help everywhere. It is not accident that make the fortune. It is assiduous purpose and work; and we all know how difficulty and poverty have inspired and made great men. To the idle and luxurious, opportunity offers nothing. The book is necessary to the eye; there must be something to take hold of. There is something in industry which is marvellous. It accomplishes the impossible. It may not always make agree-

able people at first; but it usually ends that way. The man of little worth and no industry, he who depends upon others, is apt to be despondent, unhappy and querulous.

The only class possessing abundant leisure, who have a right to be idle, are the women who are supported by indulgent fathers and husbands, or who are rich in their own right; and it is to this class that we must look for the maintenance of the elegancies of life. They do much to preserve for us a refined tone of society, if they do nothing else. But we must observe that such women are seldom idle. The richest woman in New York is the busiest woman. She is never happy unless she is at work. She is doing something for every charity—helping along young artists, raising the poor gifted daughter of poverty to a higher opportunity, lending her kind hand everywhere.

Great wealth also brings great responsibilities, and wealthy single women do not often take advantage of their wealth to be idle. It is the very woman or man who ought to work, who is apt to be incorrigibly lazy.

Women should be educated to feel that the single life has its duties, pleasures, and rich and ample fulfilment as well as the married. "I have seen my sisters so unhappy in their wedded lives that I shall never marry," said one most attractive woman. "I believe nothing is so useful or so happy in the present crowded state of the world as a single life," said another.

Women in the single life have an enviable opportunity to live out their own individuality, and they find their place in anybody's home if they are good and agreeable. But, so long as they are fussy, sentimental, troubled about old love affairs, seeking, after the day for such things has passed, to be considered attractive, affected, and coquettish, then the old maid deserves the reproach which the vulgar have cast upon her. "It requires a very superior woman to be an old maid," said the most delightful old maid who ever lived, Miss Catharine Sedgwick.

And now for one long, last, lingering look over all the field which we have swept with our comprehensive broom.

Home, whenever and whatever it may be, is sacred. It is a place which none of us, the worst of us, wish degraded. Unhappy it may be, sordid it may be, poor it may be, but we do not wish others to speak ill of it. Very few of us wish it broken up, although it may be our sad business to leave it.

It is an inclosure for which we are willing to make vast sacrifices. It is the one education which has influenced us powerfully for good or evil.

What our fathers taught us, what our mothers sang to us, we shall never forget.

The impression we have made upon our children will never pass away. The home we have *made*—consciously or unconsciously—is the factor in their lives of the greatest importance.

We may have sown the seeds of a positive moral goodness, to see the flowers come up, but choked by weeds; we may have studied household education, and have learned the supposed seed-time and harvest of all the virtues, and have sown broadcast the grain of integrity, self-denial, energy, and industry, yet we have reared only idlers, drunkards, and selfish voluptuaries as the result of our home-training. The seed-time was ours; the harvest is the Lord's. We are not told why we sometimes fail in our best efforts, but we know that we do fail.

We can, therefore, promise no parent success. There are some soils in which plants of virtue will not grow. Nor is character dependent either upon instruction or training. The good son and the bad son grow up by the same fireside. It is the use which each will make of his opportunities which will determine the question. And even the best people must go through deep trials before character is perfected. To live unselfishly to good aims, to rise above our daily and hourly temptations, to do our duty whether rewarded or not—these are our stepping-stones.

But, whether destined to be successful or unsuccessful, all people should try to make a home whose influence shall be good. Whether humble or important, our duty remains the same—to make a good home according to our lights.

We live in an age which has thrown away tradition, yet it will not hurt us to read of the past, with its trainings and teachings, its formal precepts its stiff manners, its respect for elders, its old-school customs. Let us aim to take for our model all that was good in that sort of home.

Then let us read of the homes which have formed the great and good and useful people of our Pantheon. We may see, as in the case of Mary Russell Mitford, how a wretched and worthless father developed the most generous and useful of daughters. We may learn in almost all biographies some great lesson of virtue born of trouble. We shall have to accept many a story of worthless children who have not been made good by anything; many worthless parents who have made their children unhappy; but we shall occasionally be refreshed by a well-spring of such delightful freshness that we shall have strength given us wherewith to struggle on.

And character, when fine, is such a very remunerative thing to the mind which needs help! We almost welcome any suffering if it would make

H. R. H. PRINCESS LOUISE.

us so strong, noble, true as some people have been. We sometimes look back through our tears, and see what a large place a certain character we have known has filled in the lives of all who knew him. A hard-working country doctor may have been, as we look up his record after death, a Sir Philip Sidney, an Admirable Crichton, a Carlo Borromeo. We remember his mirth, his cheerfulness, his courtesy, his wit, his industry, faithfulness, and unselfishness. We remember how he came into the sick-room at early morning, bringing flowers with the dew on them for his suffering patient, and we follow him through the years of his beneficent but unrecorded life, saying, "This was *character*."

So of many a woman unknown to fame, we remember how bravely she met calamity and shame, brought to her by the man who had sworn to love and to protect. We remember how cheerfully she worked for him and for her children, never losing her faith in human nature, how she was capable of seeing others succeed without envy, how pure her heart, how equable her temper. We remember how she made home happy, and how pretty and agreeable she was, although her mornings were given to music lessons and her afternoons to drudgery. No one would have suspected, as she gathered her lambs about her evening wood fire, that she had been keeping the wolf from the door. This was *character*.

And we remember the man who all through his life lived under an unjust suspicion to shield a brother or a son. We think of the old man to whom came domestic trials of the hardest, yet who never lost his faith.

We think of the brilliant woman of society, who stuffs her wounds with brocade, and never lets the world see that she bleeds inwardly. She has swallowed her troubles. She can work for that worthless, that drunken son. No one will know that she does it. It is necessary for the other members of her family that she keep up that home in its supposed splendour. It is only another sleepless year to her! What does it matter? This is *character*.

So long as men and women remember that home is the anchor of the State, so long will they be doing their duty to themselves, to their country, and to God.

We have not been able to lay down any definite and unalterable rules. The hours of rising, of retiring, of taking meals, of dressing, receiving company, and of allowing either gaiety or sobriety to rule the house, this must be left to the sense, taste, and discretion of every householder.

Almost all people of sense agree as to the advantages of early rising and punctuality and economy and general good manners. It may seem very commonplace to even allude to them. It is to that higher instinct which

lies behind good reputation to which we would appeal. It is to the sacred sense of the reality of home. It is to the feeling that Wordsworth expresses in his well-known lines respecting those

"——who never roam.
True to the sacred points of heaven and home."

Still less have we been able to tell parents, except very generally, what books their children should read. We are very great believers in fairy tales, and think that the nursery circle should be entertained by the mother in reading aloud those delightfully fantastic productions of Grimm and others who have explored the world under the fern-leaves. There is no danger that these stories will make liars of children, as some conscientious people have feared. A child perceives at once the difference between fact and fancy.

And the fairy stories are as true as "Sandford and Merton" or the "Rollo Books." Let children read both. Let the delicate instruction which filters through "Jack and the Bean-Stalk," "Cinderella," and through the immortal pages of the "Arabian Nights," reach a youthful mind early. These books give an elegance and a fulness to the intellect of a child which no practical book can reach. A child is nearer heaven than we are he still sees the unseen.

"And trailing clouds of glory, does he come
From God, who is his home.

We should remember that his clear and unpolluted mind still revels in dimly remembered wonders, of which we have lost sight, and the universal craving of a child's mind for the wonderful is not to be despised.

As for the growing man and woman, we can only say: give them good books at first, and they will never wish for any other. Form a taste, and then turn them into a well-selected library. If a little girl comes to her mother and asks, "What shall I read?" she should always be helped to a good book. But, after her tastes are pronounced, she will read what she likes or will not read at all.

And we would earnestly urge upon American mothers to go into society with their daughters, to make the greatest effort to be with them, to know well their intimates, to keep young for their daughters' sake. It is very often that, with small means and with young children, a mother finds herself unable to do this thing. Indeed, it is sometimes the case that a mother economizes on her own dress in order that her daughter may be better dressed, and stays at home herself to send her daughter. This is a great mistake. The mother's presence as chaperon to her daughter would

have saved us much national scandal. In families of good ancestry, where good manners have been transmitted, we find always the mother a prominent feature in society. In families of no antecedents, those who must make a family, certainly this rule should be even more vigorously followed. We would have no reproach of "fast girls" if dignified mothers watched over their daughters' amusements.

If parents wish their children to be loving, appreciative, and grateful, they should teach them to reverence and to obey. If they wish them to be graceful, accomplished, refined, they must surround them with these advantages at home. They must teach them not only those principles of good-breeding which spring from the heart, but they must tell them of the immense force which lies in social good-breeding and in pleasant manners.

And if we could compress into one golden sentence the nearest approach to a formula for home happiness, it would be this: Be as polite to one another as if all were strangers. Do not let the intimacy of home break down a single barrier of self-control. Let every member of the family studiously respect the rights—moral, intellectual, and physical—of every other member. Let each one refrain from attacking the convictions of the other. We should not so treat a stranger. Why our own?

> "Still in thy right hand carry gentle peace,
> To silence envious tongues."

XIV.

ON THE MANAGEMENT OF MONEY.

BY LORD LYTTON.

(*Addressed chiefly to the Young.*)

In a work of fiction I once wrote this sentence, which, perhaps, may be found, if considered, suggestive of some practical truths—"Money is character,"

In the humbler grades of life, certainly character is money. The man who gives me his labour in return for the wages which the labour is worth, pledges to me something more than his labour—he pledges to me certain qualities of his moral being, such as honesty, sobriety, and diligence. If, in these respects, he maintain his character, he will have my money as long as I want his labour; and when I want his labour no longer, his character is money's worth to him for somebody else. If, in

addition to the moral qualities I have named, he establish a character for other attributes which have their own price in the money market—if he exhibits a superior intelligence, skill, energy, zeal—his labour rises in value. Thus, in the humblest class of life, character is money; and according as the man earns or spends the money, money in turn becomes character.

As money is the most evident power in the world's uses, so the use that he makes of money is often all that the world knows about a man. Is our money gained justly and spent prudently? our character establishes a claim on respect. Is it gained nobly and spent beneficently? our character commands more than respect—it wins a place in that higher sphere of opinion which comprises admiration, gratitude, love. Is money inherited without merit of ours, lavished recklessly away? our character disperses itself with the spray of the golden shower—it is not the money alone of which we are spendthrifts. Is money meanly acquired, selfishly hoarded? it is not the money alone of which we are misers; we are starving our own human hearts, depriving them of their natural ailment in the approval and affection of others. We invest the money which we fancy so safe out at compound interest in the very worst possession a man can purchase —viz., an odious reputation. In fact, the more we look round the more we shall come to acknowledge that there is no test of a man's character more generally adopted than the way in which his money is managed. Money is a terrible blab; she will betray the secrets of her owner whatever he do to gag her. His virtues will creep out in her whisper, his vices she will cry aloud at the top of her tongue.

But the management of money is an art? True; but that which we call an art means an improvement, and not a deterioration, of a something existent already in nature; and the artist can only succeed in improving his art in proportion as he improves himself in the qualities which the art demands in the artist. Now the management of money is, in much, the management of self. If Heaven allotted to each man seven guardian angels, five of them at least would be found night and day hovering over his pockets.

On the first rule of the art of managing money all preceptors must be agreed. It is told in three words, "Horror of Debt."

Nurse, cherish, never cavil away, the wholesome horror of DEBT. Personal liberty is the paramount essential to human dignity, and human happiness. Man hazards the condition and loses the virtues of freeman in proportion as he accustoms his thoughts to view, without anguish and shame, his lapse into the bondage of debtor. Debt is to man what the

serpent is to the bird; its eye fascinates, its breath poisons, its coil crushes sinew and bone, its jaw is the pitiless grave. If you mock my illustration, if you sneer at the truth it embodies, give yourself no farther trouble to learn how to manage your money. Consider yourself doomed; pass on your way with a jaunty step; the path is facile—paths to Avernus always are. But if, while I write, your heart, true to the instinct of manhood, responds to my words—if you say, "Agreed; that which you call the first rule for the management of money, I hold yet more imperative as the necessity to freedom and the life-spring of probity"—then advance on your way, assured that wherever it wind it must ascend. You see but the temple of Honour; close behind it is the temple of Fortune. You will pass through the one to the other.

"But," sighs the irresolute youth, whom the eye of the serpent has already charmed, "it is by no means so easy to keep out of debt as it is to write warnings against getting into it."

Easy to keep out of debt? Certainly not. Nothing in life worth an effort is easy. Do you expect to know the first six books of Euclid by inspiration? Could you get over that problem in the first book, popularly called the Ass's Bridge, without a sigh of fatigue? Can you look back to the rudimentary agonies of the Multiplication Table and the Rule of Three, or *As in præsenti*, or even *Propria quæ maribus*, without a lively recollection of the moment when you fairly gave in, and said, "This is too much for human powers?" Even in things the pleasantest, if we wish to succeed we must toil. We are all Adam's children. Whatever we culture on earth, till we win our way back into Eden, we must earn by the sweat of our brain. Not even the Sybarite was at ease on his rose-bed—even for him some labour was needful. No hand save his own could uncrumple the rose-leaf that chafed him. Each object under the sun reflects a difficulty on the earth. "Every hair," says that exquisite Publius Syrus, whose fragments of old verse are worth libraries of modern comedies—"every hair casts its shadow."

But think, oh, young man! of the object I place before you, and then be ashamed of yourself if you still sigh, "Easy to preach, and not easy to practise." I have no interest in the preaching; your interest is immense in the practice. That object not won, your heart has no peace, and your hearth no security. Your conscience itself leaves a door open night and day to the tempter; night and day to the ear of a debtor steal whispers that prompt to the deeds of a felon. Three years ago you admired the rising success of some most respectable man. Where is he now? In the dock—in the jail—in the hulks? What! that opulent banker, whose

plate dazzled princes? or that flourishing clerk, who drove the high-stepping horse to his office? The same. And his crime? Fraud and swindling. What demon could urge so respectable a man to so shameful an act? I know not the name of the demon, but the cause of the crime the wretch tells you himself. Ask him: what is his answer? "I got into debt—no way to get out of it but the way which I took—to the dock, to the jail, to the hulks!"

Easy to keep out of debt! No, my young friend, it is difficult. Are you rich? The bland tradesman cries, "Pay when you please." Your rents or your father's allowance will not be due for three months; your purse in the mean while can not afford you some pleasant vice or some innocent luxury, which to young heirs seems a want. You are about to relinquish the vice or dispense with the luxury; a charming acquaintance, who lives no one knows how, though no one lives better, introduces an amiable creature, sleek as a cat, with paws of velvet hiding claws of steel, his manners are pleasing, his calling—usury. You want the money for three months. Why say three? Your name to a bill for *six* months, and the vice or the luxury is yours the next hour! Certainly the easy thing here is to put your name to the bill. Presto! you are in debt—the demon has you down in his books.

Are you poor? Still your character is yet without stain, and your character is a property on which you can borrow a trifle. But when you borrow on your character, it is your character that you leave in pawn. The property to you is priceless, and the loan that subjects it to be a pledge unredeemed is—a trifle.

Young friend, be thou patrician or plebeian, learn to say No at the first to thy charming acquaintance. The worst that the "No" can inflict on thee is a privation—a want—always short of starvation. No young man, with the average health of youth, need be in danger of starving. But, despite that privation or want, thy youth itself is such riches that there is not a purse-proud old millionaire of sixty who, provided thy good name be unsoiled, would not delightedly change with thee. Be contented! Say No! Keep unscathed the good name, keep out of peril the honour, without which even yon battered old soldier, who is hobbling into his grave on half-pay and a wooden leg, would not change with Achilles.

Here I pause, seemingly to digress, really to enlarge the scope of my reasoning. In the world around and without us there are first principles which defy all philosophy. We may arrive with Newton at the law of gravitation; there we stop. "We enquire no more," says Sir William

Hamilton, "although ignorant now as previously of the cause of gravitation."

But man in himself is a world; and in man's moral organization there are also first principles, on which the more we would dispute the more likely we are to be led astray. All things can be argued upon; and therefore, if we so choose, we may be argued out of all things the best for us. There are some things for men and nations which it is safest never to submit to an argument. I would not, as an Englishman, permit trial by jury, or the right of *habeas corpus*, or the honour of the national flag, or the privilege of asylum to political exiles to become open questions for the casuists of other lands to refine into ignorant prejudices on the part of my old-fashioned country. So, as a human being, in myself integral and independent—as sovereign in free-will as any state on earth, however numerous its citizens, however imperial its sceptre—there are certain things which I will not allow to be open questions; I assume them as indispensable to my own completeness of human being. I grant that a great deal may be said against them, as there may be against trial by jury and the honour of our flag; but I have made up my mind to maintain and not to discuss them, not because I doubt that all hostile arguments could be triumphantly answered, but because I may not be such a proficient in casuistry as to be able to satisfy others; and in striving to do so I may unsettle in my own mind the foundation of all that I know to be both the temples and bulwarks of my existence as man. I will not consent to make open questions of aught without which I should think it a mercy if I were hanged as a dog. I have read very subtile arguments against the probabilities that my frame holds a soul—that my present life involves a hereafter. I have read arguments no less subtile against the wisdom and almost against the existence of every conceivable virtue. I could quote pages by writers of no mean ability to show that common honesty is a vulgar error. So that, in fact, if I were to deliver up my whole self to the arbitrament of special pleaders, to-day I might be argued into an atheist, and to-morrow into a pick-pocket. Therefore I say to the young man about entering life as a free agent, Whenever you are tempted to do something which you have been brought up by honest parents and teachers to know to be wrong, do not argue about it—you can at least hold your tongue. Without an argument you may commit the fault, repent, and atone it, because you have not frittered away the conviction that you have done wrong; but if you once make the wrong an open question, and consent to argue with perhaps a more practiced casuist than yourself—his argument taking part with your temptation—

then the chance is that you do more than a wrong thing, that you do wrong upon philosophical system, and will very soon substitute custom for conscience. Never be argued out of your soul, never be argued out of your honour, and never be argued into believing that soul and honour do not run a terrible risk if you limp into life with the load of a debt on your shoulders, and, as the debt grows heavy and heavier, the hiss of some lying fiend in your ear, "Shake it off; you need not be bankrupt; there is an alternative." "Oh, heavens! what alternative, say!" and the fiend whispers low, suasive words—for the fiends argue well—suasive words which, put in plain English, mean this: "Be a cheat; be a swindler."

Shake hands, brave young friend; we are agreed. You consent to have horror of debt. You will abstain, you will pinch, you will work harder and harder, if needful. You will not slink through the crowd as a debtor.

Now comes the next danger. You will not incur debt for yourself, but you have a friend. Pythias, your friend, your familiar—the man you like best and see most of—says to you, "Damon, be my security—your name to this bill!" Heaven forbid that I should cry out to Damon, "Pythias means to cheat thee—beware!" But I address to Damon this observation: "Pythias asks thee to guarantee that three, six, or twelve months hence he will pay to another man—say to Dionysius—so many pounds sterling." Here your first duty as an honest man is not to Pythias, but to Dionysius. Suppose some accident happen—one of these which, however impossible it may seem to Pythias, constantly happen to the Pythiases of other Damons who draw bills on the bank of Futurity; suppose that the smut or the rain spoil the crops on which Pythias relies, or the cargoes he expects from Marseilles, California, Utopia, go down to the bottomless seas—Dionysus must come upon you! Can you pay to Dionysius what you pledge yourself to pay to him in spite of those accidents? He thinks those accidents not only possible, but probable, or he would not require your surety, nor charge twenty per cent. for his loan; and, therefore, since he clearly doubts Pythias, his real trust is in you. Do not merit the trust? Can you pay the money if Pythias can not? and, allowing that you pay the money, are your other obligations in life such as to warrant that sacrifice to Friendship? If you can not pay, or if you owe it to others more sacred than Pythias himself—owe it to your parents, your plighted bride, or wedded wife, or the children to whom, what, before their birth, was your fortune, has become the trust money for their provision—not to hazard for Pythias that for which, if lost, not you alone but others must suffer, then do not common duty and common honesty

forbid you to become surety to Pythias for an obligation which it belongs not to Pythias but to Chance to fulfil? I am the last man to say, "Do not help your friend," if you honourably can. If we have money, we manage it ill when we can not help a friend at a pinch. But the plain fact is this: Pythias wants money. Can you give it, at whatever stint to yourself, in justice to others? If you can, and you value Pythias more than the money, give the money, and there is an end of it; but if you can not give the money, don't sign the bill. Do not become what, in rude truth, you do become—a knave and a liar—if you guarantee to do what you know that you can not do should the guarantee be exacted. He is generous who gives; he who lends may be generous also, but only on one condition, viz., that he can afford to give what he can afford to lend; of the two, therefore, it is safer, friendlier, cheaper in the long-run to give than to lend. Give, and you may keep your friend if you lose your money; lend, and the chances are that you lose your friend if ever you get back your money.

But if you do lend, let it be with the full conviction that the loan is a gift, and count it among the rarest favours of Providence if you be ever repaid. Lend to Pythias on the understanding, "This is a loan if you ever can repay me. I shall, however, make this provision against the chances of a quarrel between us, that if you can not repay me it stands as a gift."

And whatever you lend, let it be your money, and not your name. Money you may get again, and, if not, you may contrive to do without it; name once lost you can not get again, and if you can contrive to do without it, you had better never have been born.

With honour, poverty is a Noble; without honour, wealth is a Pauper. Is it not so? Every young man not corrupted says "Yes." It is only some wretched old cynic, no drop of warm blood in his veins, who says, "Life is a boon without honour."

But if a Jew knock at your door and show you a bill with your name as a promise to pay, and the bill be dishonoured, pray what becomes of your name?

"My name!" falters Damon. "I am but a surety; go to Pythias."

"Pythias has bolted!"

Pay the bill, Damon, or good-bye to your honour!

Pardon my prolixity; earnestness is apt to be garrulous. *Vixi!* I have lived and known life. And, alas, what careers bright in promise I have seen close in jail or in exile; what talents, profuse in their blossom, die off without coming to fruit; what virtues the manliest rot into vices

the meanest, which, when one cried in amazement, "How account for so doleful an end to so fair a commencement?" solve their whole mystery in this: "Damon never recovered his first fatal error; Damon put his name to a bill by which Pythias promised to pay so and so in three months."

Having settled these essential preliminaries—1. Never to borrow where there is a chance, however remote, that you may not be able to repay; 2. Never to lend what you are not prepared to give; 3. Never to guarantee for another what you can not fulfil if the other should fail—you start in life with this great advantage: whatever you have, be it little or much, is your own. Rich or poor, you start as a freeman, resolved to preserve in your freedom the noblest condition of your being as a man.

Now fix your eyes steadily on some definite end in the future. Consider well what you chiefly wish to be; then compute at the lowest that which you are by talent, and at the highest that which you can be by labour. Always under estimate the resources of talent; always put as against you the chances of luck. Then set down on the other side, as against talent defective, against luck adverse, all that which can be placed to the credit of energy, patience, perseverance. These last are infinite; whatever be placed against them is finite; you are on the right side of any system of book-keeping by double-entry on which a mortal may presume to calculate accounts with Fate.

The finest epithet for genius is that which was applied to Newton's genius, "patient." He who has patience, coupled with energy, is sure, sooner or later, to obtain the results of genius; he who has genius without patience and without energy (if, indeed, such genius be a thing possible) might as well have no genius at all. His works and aims, like the plants of Nature before the Deluge, are characterized by the slightness of their roots.

Fortune is said to be blind, but her favourites never are. Ambition has the eye of the eagle, Prudence that of the lynx; the first looks through the air, the last along the ground.

The man who succeeds above his fellows is the one who, early in life, clearly discerns his object, and toward that object habitually directs his powers. Thus, indeed, even genius itself is but fine observation strengthened by fixity of purpose. Every man who observes vigilantly and resolves steadfastly grows unconsciously into genius.

Assuming that fortune be your object, let your first efforts be not for wealth, but independence. Whatever be your talents, whatever your prospects, never be tempted to speculate away, on the chance of a palace,

that which you need as a provision against the work-house. Youth is too apt to exclaim, "Aut Cæsar aut nullus." But that saying was only for a Cæsar; and even for him it was not a wise one. To a Cæsar there should have been no *Aut*. Nemesis sighed "Aut nullus" when Cæsar fell at the feet of the marble Pompey.

A daring trader hazards the halter if he says "Rothschild or nothing;" a philosopher will end as a charlatan if he says "Aristotle or nothing;" a gentleman who says "Sir Philip Sidney or nothing" is on the eve of becoming a blackleg. The safe maxim is this: "The highest I can be, but on no account—nullus."

Let your first care be, then, independence. Without pecuniary independence you are not even intellectually free; with independence, even though it be gained through some occupation which you endure as a drudgery, still, out of the twenty-four hours, there will be always some hours for the occupation in which you delight.

This observation applies in fullest force to aspirants in literature. It is my cruel fate to receive no unfrequent communications from youths whose calling is that of the counter, whose tastes are those of Parnassus; and the pitch of these unsolicited communications is invariably this:

"I gain so many shillings a week by a vulgar and detestable trade; but I have a soul above buttons. Read the MSS. I inclose. Do you not think there is some merit in them? Could I not succeed as an author? I have had disadvantages to encounter—so had Burns. I can not boast of a scholastic education: I have had very little leisure to educate myself; still"—et cetera, et cetera, all the et cetera involving the same question: "As I am unfit to be an apprentice, am I not fit to be an author? Not having enough of human intelligence, perseverance, and energy to excel as a hatter, a tailor, a butcher, a baker, may I not be a Walter Scott or a Byron?"

Useless—I solemnly warn all such contingent correspondents as may now be looming ominously among other unwelcome clouds that menace my few holiday hours—useless to apply to me. Be the specimens of genius under difficulties thus volunteered to my eye good, bad, or indifferent, my answer, as an honest man, can be only this, "Keep to the calling that assures you a something out of which you may extract independence until you are independent. Give to that calling all your heart, all your mind. If I were hatter, or tailor, or butcher, or baker, I should resolve to consider my calling the best in the world, and devote to it the best of my powers. Independence once won, then be Byron or Scott if you can."

Independence! independence! the right and the power to follow the bent of your genius without fear of the bailiff and dun should be your first inflexible aim. To attain independence, so apportion your expenditure as to spend less than you have or you earn. Make this rule imperative. I know of none better. Lay by something every year, if it be but a shilling. A shilling laid by, net and clear from a debt, is a receipt in full for all claims in the past, and you go on with light foot and light heart to the future. "How am I to save and lay by?" saith the author, or any other man of wants more large than his means. The answer is obvious: "If you can not increase your means, then you must diminish your wants." Every skilled labourer of fair repute can earn enough not to starve, and a surplus beyond that bare sufficiency. Yet many a skilled labourer suffers more from positive privation than the unskilled rural peasant. Why? Because he encourages wants in excess of his means.

A man of £300 a year, living up to that income, truly complains of poverty; but if he live at the rate of £250 a year, he is comparatively rich. "Oh," says Gentility, "but I must have this or that, which necessitates the yearly £50 you ask me to save—I must be genteel." Why that must? That certain folk may esteem you? Believe me, they esteem you much more for a balance at your banker's than for that silver teapot or that mannikin menial in sugar-loaf buttons. "But," says Parental Affection, "I must educate my boy; that £50 saved from my income is the cost of his education." Is it so? Can all the school-masters in Europe teach him a nobler lesson than that of a generous thrift, a cheerful and brave self-denial? If the £50 be really the sum which the boy's schooling needs, and you can spare nothing else from your remaining £250, still save and lay by for a year, and during that year let the boy study at home, by seeing how gladly you all are saving for him. Then the next year the schooling is the present which you all—father, mother, and sister—by many slight acts of self-denial, have contrived to make to your boy. And if he be a boy of good heart, a boy such as parents so thoughtful nearly always rear, he will go to his school determined to make up to you for all the privations he has seen those he loves endure for his sake.

You may tell me that practically it comes to the same thing, for the school goes on, and next year you must equally pinch for the £50. True; but there is this mighty difference, you are a year in advance of the sum; and, the habit of saving thus formed, you may discover something else that will bear a retrenchment. He who saves for one year finds the security, pleasure, and pride in it a luxury so great that his invention will be quickened to keep it. Lay by! lay by! What makes the capital of nations?

Savings; nothing else. Neither nations nor men are safe against fortunes unless they can hit on a system by which they save more than they spend. When that system is once established, at what a ratio capital accumulates! What resources the system gradually develops! In that one maxim is the secret of England's greatness! Do you think it mean to save more than you spend? You do in that what alone gives your country its rank in the universe. The system so grand for an empire can not be mean for a citizen.

Well, we have now added another rule to the canons prescribed to the Management of Money: save more than you spend. Whatever your means be, so apportion your wants that your means may exceed them. Every man who earns but ten shillings a week can do this if he please, whatever he may say to the contrary; for if he can live upon ten shillings a week, he can live upon nine and elevenpence.

In this rule mark the emphatic distinction between poverty and neediness. Poverty is relative, and therefore not ignoble; Neediness is a positive degradation. If I have only £100 a year, I am rich as compared with the majority of my countrymen. If I have £5000 a year, I may be poor as compared with the majority of my associates, and very poor compared to my next-door neighbour. With either of these incomes I am relatively poor or rich; but with either of these incomes I may be positively needy, or positively free from neediness. With the £100 a year I may need no man's help; I may at least have "my crust of bread and liberty." But with £5000 a year I may dread a ring at my bell; I may have my tyrannical masters in servants whose wages I can not pay; my exile may be at the fiat of the first long-suffering man who enters a judgment against me; for the flesh that lies nearest to my heart some Shylock may be dusting his scales and whetting his knife. Nor is this an exaggeration. Some of the neediest men I ever knew have a nominal £5000 a year. Every man is needy who spends more than he has; no man is needy who spends less. I may so ill manage my money that, with £5000 a year, I purchase the worst evils of poverty—terror and shame; I may so well manage my money that, with £100 a year, I purchase the best blessings of wealth—safety and respect, Man is a kingly animal. In every state which does not enslave him, it is not labour which makes him less loyally lord of himself—it is fear.

> "Rex est qui metuit nihil,
> Et hoc regnum sibi quisque det."

Money is character—money also is power. I have power not in proportion to the money I spend on myself, but in proportion to the money

I can, if I please, give away to another. We feel this as we advance in years. How helpless is an old man who has not a farthing to give or to leave! But be moderately amiable, grateful, and kind, and though you have neither wife nor child, you will never want a wife's tenderness nor a child's obedience if you have something to leave or to give. This reads like satire; it is sober truth.

But now we arrive at the power of money well managed. You have got money—you have it; and, with it, the heart, and the sense, and the taste to extract from the metal its uses. Talk of the power of knowledge! What can knowledge invent that money can not purchase? Money, it is true, can not give you the brain of the philosopher, the eye of the painter, the ear of the musician, nor that inner sixth sense of beauty and truth by which the poet unites in himself philosopher, painter, musician; but money can refine and exalt your existence with all that philosopher, painter, musician, poet, accomplish. That which they are your wealth can not make you, but that which they do is at the command of your wealth. You may collect in your libraries all thoughts which all thinkers have confided to books; your galleries may teem with the treasures of art; the air that you breathe may be vocal with music; better than all, when you summon the Graces, they can come to your call in their sweet name of Charities. You can build up asylums for age, and academies for youth. Pining Merit may spring to hope at your voice, and "Poverty grow cheerful in your sight." Money well managed deserves, indeed, the apotheosis to which she was raised by her Latin adorers; she is *Diva Moneta*—a goddess.

I have said that he who sets out in life with the resolve to acquire money should place clearly before him some definite object to which the money is but the means. He thus sweetens privation and dignifies thrift. Money never can be well managed if sought solely through the greed of money for its own sake. In all meanness there is a defect of intellect as well as of heart. And even the cleverness of avarice is but the cunning of imbecility.

The first object connected with money is the security for individual freedom—pecuniary independence. That once gained, whatever is surplus becomes the fair capital for reproductive adventure. Adhere but to this rule in every speculation, however tempting, preserve free from all hazard that which you require to live on without depending upon others.

It is a great motive to economy, a strong safe-guard to conduct, and a wonderful stimulant to all mental power, if you can associate your toil for money with some end dear to your affections. I once knew a boy of good

parts, but who seemed incorrigibly indolent. His father, a professional man, died suddenly, leaving his widow and son utterly destitute. The widow resolved to continue the education of her boy, however little he had hitherto profited by it—engaged herself as teacher at a school, and devoted her salary to her son. From that moment the boy began to work in good earnest. He saw the value of money in this world; he resolved to requite his mother—to see her once more in a home of her own; he distinguished himself at school; he obtained, at the age of sixteen, an entry in a mercantile house. At the age of twenty his salary enabled him to place his mother in a modest suburban lodging, to which he came home every night. At the age of thirty he was a rich man, and, visiting him at his villa, I admired his gardens. He said to me, simply, "I have no taste for flowers myself, but my mother is passionately fond of them. I date my first step in life from my resolve to find her a home; and the invention in my business to which I owe my rise from clerk to partner could never have come into my brain, and been patiently worked out, if, night and day, I had not thought of my mother's delight in flowers."

A common motive with a young man is an honest love for the girl whom he desires to win as his wife. Nay, if no such girl yet has been met on the earth, surely she lives for him in the cloudland of Fancy. Wedlock, and wedlock for love, is the most exquisite hope in the innermost heart of every young man who labours; it is but the profligate idlers who laugh at that sacred ideal. But it is only the peasant or mechanic who has the right to marry on no other capital than that which he takes from nature in sinews and thews. The man whose whole condition of being is in his work from day to day must still have his helpmate. He finds his helpmate in one who can work like himself if his honest industry fail her. I preach to the day-labourer no cold homilies from political economy. The happiness and morality of the working class necessitate early marriages; and for prudent provision against the chances of illness and death there are benefit clubs and societies, which must stand in lieu of jointure and settlement. But to men of a higher grade in this world's social distinctions, Hymen must generally contrive to make some kind of compromise with Plutus. I grant that your fond Amaryllis would take your arm to the altar though you have not a coat to your back; but Amaryllis may have parents who not unreasonably ask, "How, young Strephon, can you maintain our daughter? and if your death demolish all those castles in the air which you are now building without brick and mortar, under what roof will she lay her head?"

And suppose that no parents thus unkindly interpose between Amaryllis and you, still it is a poor return to the disinterested love of Amaryllis to take her, thoughtless child, at her word. Amaryllis proves her unselfish love; prove yours, my friend Strephon. Wait—hope—strive; her ring is on your finger; her picture, though it be but a villainous photograph, hangs by your bedside; her image is safe in the innermost fold of your heart. Wait till you can joyously say, "Come, Amaryllis, Plutus relaxes his frown; here is a home which, if humble, at least is secure; and if death suddenly snatch me away, here is no castle in air for my widow, Amaryllis shall never live upon alms!"

How your love will deepen and strengthen in that generous delay; and with your love, how your whole nature, mental and moral, will deepen and strengthen! Here, indeed, is an object for climbing the rough paths on to fortune; and here the first friendly opposition of Plutus only serves to place upon surer foundations the blessings promised by Hymen. Constancy in love necessitates patience and perseverance in all efforts for fortune; and with patience and perseverance, a man of fair average capacities is the master of fortune.

But there are lesser objects than those I have defined as the most frequently coveted which lend a charm to the making of money.

It is a motive to economy, and a dissuasion from many profitless follies, to cherish early in life one favourite hobby, provided the hobby be sound and well-bred.

The taste for books, and the desire to collect them, are no mean tests of a school-boy's career as man.

One of the most distinguished personages in Europe, showing me his library—which is remarkable for its extent and its quality (it was formed on the principle of including all works that treat, directly or indirectly, on the human mind, and thus, necessarily includes almost every book worth reading)—said to me, "Not only this collection, but my social successes in life, I trace back to the first franc I saved from the cake shop to spend on the book-stall. When I was a young man, and received an invitation to a ball, not being then rich, I calculated what it would cost me in kid gloves and coach hire, and, refusing the ball, bought a book with the money. The books I bought I read: the books I read influenced my career." Perhaps this eminent person might have thought of the balls thus refused in his early youth when, being still young, he gave his own first ball as Prime Minister.

But hobbies should be wives, not mistresses. It will not do to have more than one at a time. One hobby leads you out of extravagance; a

team of hobbies you cannot drive till you are rich enough to find corn for them all. Few men are rich enough for that.

In the management of money there are some things we do for show—wisely if we can afford it. Money is station as well as character and power.

In matters of show, it is better to have one decided success than fifty expensive failures. Better to have one first-rate picture in a modest drawing-room than fifty daubs in a pompous gallery. Better to have one handsome horse in a brougham than four screws in a drag. Better to give one pleasant tea party than a dozen detestable dinners.

A man of very moderate means can generally afford one effect meant for show, as a requisite of station, which, of its kind, may not be surpassed by a millionaire. Those who set the fashions in London are never the richest people. Good taste is intuitive with some persons, but it may be acquired by all who are observant. In matters of show, good taste is the elementary necessity: after good taste, concentration of purpose. With money as with genius, the wise master of his art says, "There is one thing I can do well; that one thing I will do as well as I can," Money, like genius, is effective in proportion as it is brought to bear on one thing at a time. Money, like genius, may comprehend success in a hundred things, but still, as a rule, one thing at a time; that thing must be completed or relinquished before you turn to another.

For a young man of a gentleman's station and a cadet's income, the only show needed is that which probably pleases himself the most—the effect produced by his own personal appearance. Dress will therefore not unreasonably, and by no means frivolously, demand some of his thoughts and much of his money. To the station of a young aspirant of fashion in the polite world, who is known not to be rich, it matters nothing what he pays for his lodging: he can always give his address at a club or hotel. No one cares how much or how little he pays for his dinner. No fine lady inquires if he calls at her house on foot or in a carriage. But society expects him to dress as much like a gentleman as if he were a young duke: and, fortunately, as young dukes nowadays do not wear gold lace and miniver, this is no unreasonable exaction on the part of society. A gentleman's taste in dress is, upon principle, the avoidance of all things extravagant. It consists in the quiet simplicity of exquisite neatness; but as the neatness must be a neatness in fashion, employ the best tailor; pay him ready money, and, on the whole, you will find him the cheapest.

Still, if a young man of the gay world means to do the best that he can for his person, and really does obtain a certain rank or repute should it be

only said of him that he is extremely well dressed, he will remember that no man in great capitals, without pre-eminent claims of fortune, birth, or beauty, ever really finds a place in *haut ton* without some cultivation of mind. All the men I have ever known who have lifted themselves into authority in the inner circles of fashion have been men of considerable intellectual accomplishment. They have either had wit or humour to a fine degree, or admirably strong sense and judgment, or keen penetration into character; they have been, from qualities far below the surface, either charming or instructive companions.

Mere dandies are but cut flowers in a bouquet—once faded, they can never reblossom. In the drawing-room, as every where else, Mind in the long-run prevails. And, oh, well-booted Achaian! for all those substantial good things which money well managed commands, and which, year after year, as you advance in life, you will covet and sigh for, yon sloven, thick-shoed and with cravat awry, whose mind, as he hurries by the bow-window at White's, sows each fleeting moment with thoughts which grow not blossoms for bouquets, but corn sheaves for garners, will, before he is forty, be far more the fashion than you! He is commanding the time out of which you are fading. And time, oh, my friend! is money. Time wasted can never conduce to money well managed.

PROVERBS, NEW AND OLD.

Never sacrifice safety to large expected returns.

Never make a loan on importunity.

Never loan a borrowing friend more than you are willing to lose if he can't pay.

Never speculate deeper than you are able to lose if you lose it all.

Never borrow money to speculate with.

Owe no man any thing.

Be satisfied with a moderate rent to a good tenant.

Keep well insured, and watch your policy.

Never consult a man on business who does not manage well his own.

Avoid a second mortgage for a fresh loan.

He that maketh haste to be rich is not wise.

Poverty is no bar to marriage if both parties will work and save.

The gods help those who help themselves—men or women.

God promises nothing to idleness.

A man must ask his wife if he may be rich.

Little coins, like little drops of water, will fill a bucket.

As we sow in temporal affairs we shall reap.
Short settlements make long friendships.
Fortunes are made by earnings and savings.
Money easily gotten is soon spent.
Money earned is money valued.
It is easier to loosen up good property than to re-establish it.
In discussing business disagreements keep cool.
Less wisdom is required to make money than to keep it securely when made.

How to Preserve your Health.

THE leading conditions essential to health may be thus enumerated:—1. A constant supply of pure air; 2. A sufficiency of nourishing food, rightly taken; 3. Cleanliness; 4. A sufficiency of exercise to the various organs of the system; 5. A right temperature; 6. A sufficiency of cheerful and innocent enjoyments; and, 7. Exemption from harassing cares.

AIR.

The common air is a fluid composed mainly of two gases, in certain proportions; namely, oxygen as twenty and nitrogen as eighty parts in a hundred, with a very minute addition of carbonic acid gas. Such is air in its pure and right state, and such is the state in which we require it for respiration. When it is loaded with any admixture of a different kind, or its natural proportions are in any way deranged, it cannot be breathed without producing injurious results. We also require what is apt to appear a large quantity of this element of healthy existence. The lungs of a healthy full-grown man, will inhale the bulk of twenty cubic inches at every inspiration, and he will use no less than fifty-seven hogsheads in twenty-four hours.

Now, there are various circumstances which tend to surround us at times with vitiated air, and which must accordingly be guarded against. The first calling for attention is the miasma or noxious quality imparted

to the air in certain districts by stagnant water and decayed vegetable matter. It is now generally acknowledged that this noxious quality is in reality a subtle poison, which acts on the human system through the medium of the lungs, producing fevers and other epidemics.

Putrid matter of all kinds is another conspicuous source of noxious effluvia. The filth collected in ill-regulated towns—ill-managed drains—collections of decaying animal substances, placed too near or within private dwellings—are notable for their effects in vitiating the atmosphere, and generating disease in those exposed to them. In this case also, it is a poison diffused abroad through the air which acts so injuriously on the human frame.

The human subject tends to vitiate the atmosphere for itself, by the effect which it produces on the air which it breathes. Our breath, when we draw it in, consists of the ingredients formerly mentioned; but it is in a very different state when we part with it. On passing into our lungs the oxygen, forming the lesser ingredient, enters into combination with the carbon of the venous blood (or blood which has already performed its round through the body); in this process about two-fifths of the oxygen is abstracted and sent into the blood, only the remaining three-fifths being expired, along with the nitrogen nearly as it was before. In place of the oxygen consumed, there is expired an equal volume of carbonic acid gas, such gas being a result of the process of combination just alluded to. Now, carbonic acid gas, in a larger proportion than that in which it is found in the atmosphere, is noxious. The volume of it expired by the lungs, if free to mingle with the air at large, will do no harm; but, if breathed out into a close room, it will render the air unfit for being again breathed. Suppose an individual to be shut up in an air-tight box: each breath he emits throws a certain quantity of carbonic acid gas into the air filling the box; the air is thus vitiated, and every successive inspiration is composed of worse and worse materials, till at length the oxygen is so much exhausted that it is insufficient for the support of life. He would then be sensible of a great difficulty in breathing, and in a little time longer he would die.

Most rooms in which human beings live are not strictly close. The chimney and the chinks of the doors and windows generally allow of a communication to a certain extent with the outer air, so that it rarely happens that great immediate inconvenience is experienced in ordinary apartments from want of fresh air. But it is at the same time quite certain that, in all ordinary apartments where human beings are assembled, the air unavoidably becomes *considerably vitiated*, for in such a situation there cannot be a sufficiently ready copious supply of oxygen to make up

for that which has been consumed, and the carbonic acid gas will be constantly accumulating. This is particularly the case in bed-rooms, and in theatres, churches, and schools.

Perhaps it is in bed-rooms that the most harm is done. These are generally smaller than other rooms, and they are usually kept close during the whole night. The result of sleeping in such a room is very injurious. A common fire, from the draught which it produces, is very serviceable in ventilating rooms, but it is at best a defective means of doing so. The draught which it creates generally sweeps along near the floor between the door and the fire, leaving all above the level of the chimney-piece unpurified. Yet scarcely any other arrangement is anywhere made for the purpose of changing the air in ordinary rooms.

FOOD.

The second requisite for the preservation of health is a sufficiency of nutritious food.

Organic bodies, in which are included vegetables as well as animals, are constituted upon the principle of *a continual waste of substance supplied by continual nutrition.*

The Nutritive System of animals, from apparently the humblest of these to the highest, comprehends an *alimentary tube or cavity,* into which food is received, and from which, after undergoing certain changes, it is diffused by means of smaller vessels throughout the whole structure. In the form of this tube, and in the other apparatus connected with the taking of food, there are, in different animals, varieties of structure, all of which are respectively in conformity with peculiarities in the quality and amount of food which the particular animals are designed to take. The harmony to be observed in these arrangements is remarkably significant of that Creative design to be traced in all things.

Man Designed to Live on a Mixed Diet.—Some animals are formed to live upon vegetable substances alone; others are calculated to live upon the flesh of other animals. Herbivorous animals, as the former are called, have generally a long and complicated alimentary tube, because the nutritious part of such food, being comparatively small in proportion to the whole bulk, requires a greater space in which to be extracted and absorbed into the system. The sheep, for example, has a series of intestines, twenty-seven times the length of its body. For the opposite reasons carnivorous or flesh-devouring animals, as the feline tribe of quadrupeds, and the rapacious birds, have generally a short intestinal canal. The former class of

animals are furnished with teeth calculated by their broad and flat surfaces, as well as by the lateral movement of the jaws in which they are set, to mince down the herbage and grain eaten by them. But the carnivorous animals, with wide-opening jaws, have long and sharp fangs to seize and tear their prey. These peculiarities of structure mark sufficiently the designs of nature with respect to the kinds of food required by the two different classes of animals for their support.

The human intestinal canal being of medium length, and the human teeth being a mixture of two kinds, it necessarily follows that man was designed to eat both vegetable and animal food. As no animal can live agreeably or healthy except in conformity with the laws of its constitution, it follows that man will not thrive unless with a mixture of animal and vegetable food. The followers of Pythagoras argued, from the cruelty of putting animals to death, that it was proper to live on vegetables alone, and many eccentric persons of modern times have acted upon this rule. But the ordinances of Nature speak a different language; and, if we have any faith in these, we cannot for a moment doubt that a mixture of animal food is necessary for our well-being. On the other hand, we cannot dispense with vegetable food, without injurious consequences. In that case we place in a medium alimentary canal, a kind of food which is calculated for a short one, thus violating an arrangement of the most important nature. A balance between the two kinds of food is what we should observe, if we would desire to live a natural and consequently healthy life.

Rules Connected with Eating.—In order fully to understand how to eat, what to eat, and how to conduct ourselves after eating, it is necessary that we should be acquainted in some measure with the *process of nutrition*—that curious series of operations by which food is received and assimilated by our system in order to make good the deficiency produced by waste.

Food is first received into the mouth, and there the operations in question may be said to commence. It is there to be chewed (or masticated), and mixed with saliva, preparatory to its being swallowed or sent into the stomach. Even in this introductory stage, there are certain rules to be observed. Strange as it may appear, to know *how to eat* is a matter of very considerable importance.

Many persons, thinking it all a matter of indifference, or perhaps unduly anxious to dispatch their meals, eat very fast. They tumble their meat precipitately into their mouths, and swallow it almost without masti-

cation. This is contrary to an express law of nature, as may be easily shown.

Food, on being received into the mouth, has two processes to undergo, both very necessary to digestion. It has to be masticated, or chewed down, and also to receive an admixture of saliva. The saliva is a fluid arising from certain glands in and near the mouth, and approaching in character to the gastric juice afterward to be described. Unless food be well broken down or masticated, and also well mixed up with the salivary fluid, it will be difficult of digestion. The stomach is then called upon to do, beside its own proper duty, that which properly belongs to the teeth and saliva, and it is thus overburdened and embarrassed, often in a very serious manner. The pains of indigestion are the immediate consequence, and more remote injuries follow.

It is therefore to be concluded that *a deliberate mastication of our food is conducive to health, and that fast eating is injurious, and sometimes even dangerous.*

The food, having been properly masticated, is, by the action of the tongue, thrown into the gullet. It then descends into the stomach, not so much by its own gravity, as by its being urged along by the contractions and motions of the gullet itself. The stomach may be considered as an expansion of the gullet, and the chief part of the alimentary canal. It is, in fact, a membranous pouch or bag, very similar in shape to a bagpipe, having two openings, the one by which the food enters, the other that by which it passes out. It is into the greater curvature of the bag that the gullet enters; it is at its lesser that it opens into that adjoining portion of the canal into which the half-digested mass is next propelled.

When food has been introduced, the two orifices close, and that which we may term the second stage in the process of digestion commences. The mass, already saturated with saliva, and so broken down as to expose all its particles to the action of the gastric juice, is now submitted to the action of that fluid, which, during digestion, is freely secreted by the vessels of the stomach. The most remarkable quality of this juice is its solvent power, which is prodigious.

The food exposed to this dissolving agency is converted into a soft, grey, pulpy mass, called chyme, which, by the muscular contraction of the stomach, is urged on into the adjoining part of the alimentary canal, called the duodenum. This is generally completed in the space of from half an hour to two or three hours; the period varying according to the nature and volume of the food taken, and the mastication and insalivation it has undergone.

In the duodenum, the chyme becomes intimately mixed and incorporated with the bile and pancreatic juice; also with a fluid secreted by the mucous follicles of the intestine itself. The bile is a greenish, bitter, and somewhat viscid fluid, secreted by the liver, which occupies a considerable space on the right side of the body, immediately under the ribs. From this organ the bile, after a portion of it has passed up into the adjacent gall-bladder, descends through a small duct, about the size of a goose-quill, into the duodenum. The chyme, when mixed with these fluids, undergoes a change in its appearance; it assumes a yellow colour and bitter taste, owing to the predominance of the bile in the mass; but its character varies according to the nature of the food that has been taken. Fatty matters, tendons, cartilages, white of eggs, etc., are not so readily converted into chyme as fibrous or fleshy, cheesy, and glutinous substances. The chyme, having undergone the changes adverted to, is urged by the peristaltic motion of the intestines onward through the alimentary canal. This curious motion of the intestines is caused by the contraction of the muscular coat which enters into their structure, and one of the principal uses ascribed to the bile is that of stimulating them to this motion. If the peristaltic motion be diminished, owing to a deficiency of bile, then the progress of digestion is retarded, and the body becomes constipated. In such cases, calomel, the blue pill, and other medicines, are administered for the purpose of stimulating the liver to secrete the biliary fluid that it may quicken by its stimulating properties the peristaltic action. But this is not the only use of the bile: it also assists in separating the nutritious from the non-nutritious portion of the alimentary mass, for the chyme now presents a mixture of a fluid termed *chyle*, which is in reality the nutritious portion eliminated from the food. The chyme thus mixed with chyle arrives in the small intestines, on the walls of which a series of exquisitely delicate vessels ramify in every direction. These vessels absorb or take up the chyle, leaving the rest of the mass to be ejected from the body. The chyle, thus taken up, is carried into little bodies of glands, where it is still further elaborated, acquiring additional nutritious properties; after which, corresponding vessels, emerging from these glands, carry along the fluid to a comparatively large vessel, called the thoracic duct, which ascends in the abdomen along the side of the back-bone, and pours it into that side of the heart to which the blood that has already circulated through the body returns. Here the chyle is intimately mixed with the blood, which fluid is now propelled into the lungs, where it undergoes, from being exposed to the action of the air we breathe, the changes necessary to render it again fit for circulation. It is in the lungs, therefore, that the process of digestion is completed; the

blood has now acquired those nutrient properties from which it secretes the new particles of matter adapted to supply the waste of the different textures of the body.

When food is received into the stomach, the secretion of the gastric juice immediately commences; and when a full meal has been taken, this secretion generally lasts for about an hour. It is a law of vital action, that when any living organ is called into play, there is immediately an increased flow of blood and nervous energy toward it. The stomach, while secreting its fluid, displays this phenomenon, and the consequence is, that the blood and nervous energy are called away from other organs. This is the cause of that chilliness at the extremities which we often feel after eating heartily. So great is the demand which the stomach thus makes upon the rest of the system, that, during and for some time after a meal, we are not in a condition to take strong exercise of any kind. Both body and mind are inactive and languid. They are so, simply because that which supports muscular and mental activity is concentrated for the time upon the organs of digestion. This is an arrangement of nature which a regard to health requires that we should not interfere with. *We should indulge in the muscular and mental repose which is demanded: and this should last for not much less than an hour after every meal.* In that time the secretion of gastric juice is nearly finished; the new nutriment begins to tell upon the general circulation; and we are again fit for active exertion. The consequence of not observing this rule is very hurtful. Strong exercise, or mental application during or immediately after a meal, diverts the flow of nervous energy and of blood to the stomach, and the process of digestion is necessarily retarded or stopped. Confusion is thus introduced into the system, and a tendency to the terrible calamity of dyspepsia is perhaps established.

For the same reason that repose is required after a meal, it is necessary, in some measure, for a little while before. At the moment when we have concluded a severe muscular task, such, for example, as a long walk, the flow of nervous energy and of circulation is strongly directed to the muscular system. It requires some time to allow this flow to stop and subside; and till this takes place, it is not proper to bring the stomach into exercise, as the demand it makes when filled would not in that case be answered. Just so if we be engaged in close mental application, the nervous energy and circulation being in that case directed to the brain, it is not right all at once to call another and distant organ into play; some time is required to allow of the energy and circulation being prepared to take the new direction. It may, therefore, be laid down as a maxim, that, *a short period of*

repose, or at least of very light occupation, should be allowed before every meal.

KINDS OF FOOD.—It has been shown by a reference to the structure of the human intestinal canal, that our food is designed to be a mixture of animal and and vegetable substances.

Inquiries with respect to the comparative digestibility of different kinds of food, are perhaps chiefly of consequence to those in whom health has already been lost. To the sound and healthy it is comparatively of little consequence what kind of food is taken, provided that some variation is observed, and no excess committed as to quantity. Within the range of fish, flesh, and fowl, there is ample scope for a safe choice. There is scarcely any of the familiar aliments of these kinds, but, if plainly dressed, will digest in from two to four hours, and prove perfectly healthy. One rule alone has been pretty well ascertained, with respect to animal foods, that they are the more digestible the more minute and tender the fibre may be. They contain more nutriment in a given bulk than vegetable matters, and hence their less need for length of intestine to digest them. Yet it is worthy of notice, that between the chyle produced from animal and that from vegetable food, no essential distinction can be observed.

Tendon, suet, and oily matters in general, are considerably less digestible than the ordinary fibre ; and these are aliments which should be taken sparingly. Pickling, from its effects in hardening the fibre, diminishes the digestibility of meat. Dressed shell-fish, cheese, and some other animal foods, are avoided by many as not sufficiently digestible.

Farinaceous foods of all kinds—wheat, oaten, and barley bread, oaten porrage, sago, arrow-root, tapioca, and potatoes—are highly suitable to the human constitution. They generally require under two hours for digestion, or about half the time of a full mixed meal. The cottage children of Scotland, reared exclusively upon oaten porridge and bread, with potatoes and milk, may be cited as a remarkable example of a class of human beings possessing in an uncommon degree the blessing of health. Green vegetables and fruit, however softened by dressing, are less digestible, and less healthy as a diet. One important consideration here occurs. There is need for a certain bulk in our ordinary food. Receiving nutriment in a condensed form and in a small space will not serve the purpose. This is because the organs of digestion are calculated for receiving our food nearly in the condition in which nature presents it, namely, in a considerable bulk with regard to its nutritions properties.

QUANTITY OF FOOD.—NUMBER AND TIMES OF MEALS.—With respect to the amount of food necessary for health, it is difficult to lay down any rule,

as different quantities are safe with different individuals, according to their sex, age, activity of life, and some other conditions.

The number and times of meals are other questions as yet undetermined. As the digestion of a meal rarely requires more than four hours, and the waking part of a day is about sixteen, it seems unavoidable that at least three meals be taken, though it may be proper that one, if not two of these, be comparatively of a light nature. Breakfast, dinner, and tea as a light meal, may be considered as a safe, if not a very accurate, prescription for the daily food of a healthy person. Certainly four good meals a day is too much.

The interval between rising and breakfast ought not to be great, and no severe exercise or task-work of any kind should be undergone during this interval. There is a general prepossession to the contrary, arising probably from the feeling of freedom and lightness which most people feel at that period of the day, and which seems to them as indicating a preparedness for exertion. But this feeling, perhaps, only arises from a sense of relief from that oppression of food under which much of the rest of the day is spent. It is quite inconsistent with all we know of the physiology of aliment, to suppose that the body is capable of much exertion when the stomach has been for several hours quite empty. We have known many persons take long walks before breakfast, under an impression that they were doing something extremely favourable to health. Others we have known go through three hours of mental taskwork at the same period, believing that they were gaining so much time. But the only observable result was to subtract from the powers of exertion in the middle and latter part of the day. In so far as the practice was contrary to nature, it would likewise of course produce permanent injury. Only a short saunter in the open air, or a very brief application to business or task-work, can be safely indulged in before breakfast.

With regard to the time for either breakfast or dinner, nothing can be said with scientific authority.

Variety of Food.—A judicious variation of food is not only useful, but important. There are, it is true, some aliments, such as bread, which cannot be varied, and which no one ever wishes to be so. But apart from one or two articles, a certain variation of rotation is much to be desired, and will prove favourable to health. There is a common prepossession respecting *one dish*, which is more spoken of than acted upon. In reality, there is no virtue in this practice, excepting that, if rigidly adhered to, it makes excess nearly impossible, no one being able to eat to satiety of one kind of food. There would be a benefit from both a daily variation of

food and eating of more than one dish at a meal, *if moderation were in both cases to be strictly observed,* for the relish to be thus obtained is useful as promotive of the flow of nervous energy to the stomach, exactly in the same manner as cheerfulness is useful. The policy which would make food in any way unpleasant to the taste, is a most mistaken one; for to eat with languor, or against inclination, or with any degree of disgust, is to lose much of the benefit of eating. On the other hand, to cook dishes highly, and provoke appetite by artificial means, are equally reprehensible. Propriety lies in the mean between the two extremes.

Beverages.—The body containing a vast amount of fluids, which are undergoing a perpetual waste, there is a necessity for an occasional supply of liquor of some kind, as well as of solid food. It remains to be considered what is required in the character or nature of this liquor, to make it serve the end consistently with the preservation of health.

When the digestion is good and the system in full vigour, the bodily energy is easily sustained by nutritious food, and "artificial stimulent *only increases the wasting of the natural strength.*" Nearly all physicians, indeed, concur in representing ardent liquors as unfavourable to the health of the healthy, and as being in their excess highly injurious. Even the specious defence which has been set up for their use, on the ground that they would not have been given to man if they had not been designed for general use, has been shown to be ill-founded, seeing that *vinous fermentation,* from which they are derived, is not a healthy condition of vegetable matter, but a stage in its progress of decay. Upon the whole, there can be little doubt that these liquors are deleterious in our ordinary healthy condition; and that simple water, toast water, whey, ginger beer, or lemonade, would be preferable (the first being the most natural and the best of all), if we could only consent to deny ourselves further indulgence.

CLEANLINESS.

To keep the body in a cleanly condition is the third important requisite for health. This becomes necessary in consequence of a very important process which is constantly going on near and upon the surface of the body.

The process in question is that of *perspiration.* The matter here concerned is a watery secretion produced by glands near the surface of the body, and sent up through the skin by channels imperceptibly minute and wonderfully numerous. From one to two pounds of this secretion is believed to exude through these channels or *pores* in the course of twenty-four hours, being in fact the chief form taken by what is called the

waste of the system, the remainder passing off by the bowels, kidneys, and lungs. To promote the egress of this fluid is of great consequence to health; for when it is suppressed, disease is apt to fall upon some of the other organs concerned in the discharge of waste.

One of the most notable checks which perspiration experiences is that produced by a current of cold air upon the skin, in which case the pores instantly contract and close, and the individual is seized with some ailment either in one of the other organs of waste, whichever is in him the weakest, or in the internal lining of some part of the body, all of which is sympathetic with the condition of the skin. A result of the nature of that last described is usually recognised as a cold or catarrh. We are not at present called on particularly to notice such effects of checked perspiration, but others of a less immediately hurtful or dangerous nature.

The fluid alluded to is composed, besides water, of certain salts and animal matters, which, being solid, do not pass away in vapour, as does the watery part of the compound, but rest on the surface where they have been discharged. There, if not removed by some artificial means, they form a layer of hard stuff, and unavoidably impede the egress of the current perspiration. By cleanliness is merely meant the taking proper means to prevent this or any other matter accumulating on the surface, to the production of certain hurtful consequences.

Ablution or washing is the best means of attaining this end; and accordingly it is well for us to wash or bathe the body very frequently. Many leave by far the greater part of their bodies unwashed, except, perhaps, on rare occasions, thinking it enough if the parts exposed to common view be in decent trim. If the object of cleaning were solely to preserve fair appearances, this might be sufficient; but the great end, it must be clearly seen, is to keep the skin in a fit state for its peculiar and very important functions. Frequent change of the clothing next to the skin is of course a great aid to cleanliness, and may partly be esteemed as a substitute for bathing, seeing that the clothes absorb much of the impurities, and, when changed, may be said to carry these off. But still this will not serve the end nearly so well as frequent ablution of the whole person. Any one will be convinced of this, who goes into a bath, and uses the flesh-brush in cleansing his body. The quantity of scurf and impurity which he will then remove, from even a body which has changes of linen once a day, will surprise him.

EXERCISE.

The constitution of external nature shows that man was destined for an active existence, as, without labour, scarcely any of the gifts of providence are to be made available. In perfect harmony with this character of the material world, he has been furnished with a muscular and mental system, constructed on the principle of being fitted for exertion, and requiring exertion for a healthy existence. Formed as he is, it is not possible for him to abstain from exertion without very hurtful consequences.

Muscular Exercise.—With regard to merely bodily exercise, it is to be observed, in the first place, that we have no fewer than four hundred muscles, each designed to serve some particular end in locomotion or in operating upon external objects. A sound state of body depends very much upon each of these muscles being brought into action in proper circumstances and to a suitable extent. There is even a law operating within a certain range, by which each muscle will gain *in strength and soundness* by being brought into a proper degree of activity.

The process of waste and renovation may be said to be always going on in the body, but it does not go on with permanent steadiness unless the muscular system be exercised. Whenever one of the organs is put into exertion, this process becomes active, and the two operations of which it consists maintain a due proportion to each other. A greater flow of blood and of nervous energy is sent to the organ, and this continues as long as it is kept in activity. When one state of action follows close upon another, the renovating part of the process rather exceeds the waste, and an accretion of new substance, as well as an addition of fresh power takes place. On the contrary, when an organ is little exercised, the process of renovation goes on languidly, and to a less extent than that of waste, and the parts consequently become flabby, shrunken, and weak. Even the bones are subject to the same laws. If these be duly exercised in their business of administering to motion, the vessels which pervade them are fed more actively with blood, and they increase in dimensions, solidity, and strength. If they be little exercised, the stimulus required for the supply of blood to them becomes insufficient; imperfect nutrition takes place; and the consequences are debility, softness, and unfitness for their office. Bones may be so much softened by inaction, as to become susceptible of being cut by a knife. In a less degree, the same cause will produce languor and bad health.

It is of the utmost importance to observe, that the exercise of any particular limb does little besides improving the strength of that limb; and

that, in order to increase our general strength, the whole frame must be brought into exercise.

In order, then, to maintain in a sound state the energies which nature has given us, and still more particularly, to increase their amount, *we must exercise them.* If we desire to have a strong limb, we must exercise that limb; if we desire that the whole of our frame should be sound and strong, we must exercise the whole of our frame. It is mainly by these means that health and strength are to be preserved and improved. There are rules, however, for the application of these laws of our being.

1. In order that exercise may be truly advantageous, the parts must be in a state of sufficient health to endure the exertion. In no case must exercise be carried beyond what the parts are capable of bearing with ease; otherwise a loss of energy, instead of a gain, will be the consequence.

2. Exercise, to be efficacious, even in a healthy subject, must be excited, sustained, and directed by that nervous stimulus which gives the muscles the principal part of their strength, and contributes so much to the nutrition of parts in a state of activity.

3. The waste occasioned by exercise must be duly replaced by food; as, if there be any deficiency in that important requisite, the blood will soon cease to give that invigoration to the parts upon which increased health and strength depend.

Kinds of Bodily Exercise.—Exercise is usually considered as of two kinds—active and passive. The active consists in walking, running, leaping, riding, fencing, rowing, skating, swimming, dancing, and various exercises, such as those with the poles, ropes, &c., prescribed in gymnastic institutions. The passive consists in carriage-riding, sailing, friction, swinging, &c.

Walking is perhaps the readiest mode of taking exercise, and the one most extensively resorted to. If it brought the upper part of the body as thoroughly into exertion as the lower, it would be perfect, for it is gentle and safe with nearly all except the much debilitated. To render it the more effectual in the upper part of the body it were well to walk at all times, when convenient, *singly* and allow the arms and trunk free play. It is best to walk with a companion, or for some definite object, as the flow of nervous energy will be by these means promoted, and the exercise be rendered, as has been already explained, the more serviceable.

Very long or rapid walks should not be attempted by individuals of sedentary habits, nor by weakly persons. Their frames are totally unprepared for such violent exertion.

Running is an exercise which is intermediate between walking and leaping; it consists, in fact, of a series of leaps performed in progression from one foot to another, and the degree of its rapidity bears a constant proportion to the length of the individual and successive leaps. Although this and other gymnastic exercises, such as leaping, wrestling, throwing heavy weights, etc., may, when judiciously had recourse to, invigorate the body, yet, from apprehension of the evils and accidents which may be so occasioned, young persons ought not to be permitted to engage extensively in such exercises, except under the care of some one well acquainted with gymnastics.

Fencing is of all active exercises that which is the most commendable, inasmuch as it throws open the chest, and at the same time calls into action the muscles both of the upper and lower extremities. Add to this, that it improves very much the carriage of the body; for which reason it may be reckoned a branch of polite education.

Dancing is exhilarating and healthful, and seems to be almost the only active exercise which the despotic laws of fashion permit young ladies to enjoy.

Riding is generally classed among the passive exercises, but in reality it is one which involves much action of the whole frame, and as such is very useful for health. Pursued solitarily, it has the drawback of being somewhat dull; but, when two or three ride in company, a sufficient flow of the nervous energy may be obtained.

The amount of bodily exercise which should be taken must vary according to the habits, strength, and general health of the individual. It was an aphorism of Boerhaave, that every person should take at least two hours' exercise in the day, and this may be regarded as a good general rule.

Mental Exercise.—Having thus explained the laws and regulations by which exercise may be serviceable to the physical system, we shall proceed to show that the same rules hold good respecting the mental faculties. These, as is generally allowed, however immaterial in one sense, are connected organically with the brain—a portion of the animal system nourished by the same blood, and regulated by the same vital laws, as the muscles, bones, and nerves. As, by disuse, muscle becomes emaciated, bone softens, blood-vessels are obliterated, and nerves lose their natural structure, so, by, disuse, does the brain fall out of its proper state, and create misery to its possessor; and as, by over-exertion, the waste of the animal system exceeds the supply, and debility and unsoundness are produced, so, by over-exertion, are the functions of the brain liable to be de-

ranged and destroyed. The processes are physiologically the same, and the effects bear an exact relation to each other. As with the bodily powers, the mental are to be increased in magnitude and energy by a degree of exercise measured with a just regard to their ordinary health and native or habitual energies. Corresponding, moreover, to the influence which the mind has in giving the nervous stimulus so useful in bodily exercise, is the dependence of the mind upon the body for supplies of healthy nutriment. And, in like manner with the bodily functions, each mental faculty is only to be strengthened by the exercise of itself in particular.

It ought to be universally known, that the uses of our intellectual nature are not to be properly realized without a just regard to the laws of that perishable frame with which it is connected; that, in cultivating the mind, we must neither overtask nor undertask the body, neither push it to too great a speed, nor leave it neglected; and that, notwithstanding this intimate connection and mutual dependence, the highest merits on the part of the mind will not compensate for muscles mistreated, or soothe a nervous system which severe study has tortured into insanity. To come to detail, it ought to be impressed on all, that to spend more than a moderate number of hours in mental exercise diminishes insensibly the powers of future application, and tends to abbreviate life; that no mental exercise should be attempted immediately after meals, as the processes of thought and of digestion cannot be safely prosecuted together; and that, without a due share of exercise to the whole of the mental faculties, there can be no soundness in any, while the whole corporeal system will give way beneath a severe pressure upon any one in particular. These are truths completely established with physiologists, and upon which it is undeniable that a great portion of human happiness depends.

Repose, a Condition Demanded by Exercise.—Exercise demands occasional periods of repose, and, in particular, that a certain part of every twenty-four hours be spent in sleep. After having been engaged in daily occupations for fourteen or sixteen hours, a general feeling of fatigue and weakness is induced; the motions of the body become difficult, and senses confused, the power of volition or will suspended, and the rest of the mental faculties, becoming more and more inactive, sink at length into a state of unconsciousness. The sense of sight first ceases to act by the closing of the eyelids; then the senses of taste and smell become dormant; and then those of hearing and touch. The muscles, also, dispose themselves with a certain reference to ease of position, those of the limbs having grown indolent before those that support the head, and those that support the head before those of the trunk. In proportion as

these phenomena proceed, the respiration becomes slower and more deep, the circulation diminishes in impetus, the blood proceeds in great quantity towards the head, and all the functions of the internal organs become retarded. In this state, shut out as it were from the external world, the mind still retains its wonted activity, deprived, however, of the guidance of judgment and the power of distinct recollection; in consequence of which, it does not perceive the monstrous incongruities of the imagery which sweeps before it, and takes but faint cognizance of the time which elapses.

It may be laid down as an axiom, that the more uninterrupted sleep is, the more refreshing and salutary will be its effects; for during this period the body undoubtedly acquires an accession of nervous energy, which restlessness, however induced, must disturb; and therefore the state of the body before going to sleep, the kind of bed, and the manner of clothing require especial attention. As the functions of the body are performed more slowly during our sleeping than our waking hours, a full meal or supper, taken immediately before going to bed, imposes a load on the stomach which it is not in a condition to digest, and the unpleasant consequence of oppressive and harassing dreams is almost certain to ensue. When the sleeper lies on his back, the heart pressing, while pulsating, on the lungs, gives rise to a sense of intolerable oppression on the chest, which seems to bear down upon the whole body, so that in this painful state not a muscle will obey the impulse of the will, and every effort to move appears to be altogether unavailing. This constitutes *incubus* or *nightmare:* and it may be observed, that, as acidity on the stomach, or indigestion gives rise to such dreams, so all dreams of this disturbed character are converse indications of indigestion; for which reason the great physiologist Haller considered dreaming to be a symptom of disease.

The kind of bed on which we repose requires attention. Some are advocates for soft, others for hard beds; hence some accustom themselves to feather-beds, others to mattresses. The only difference between a soft and hard bed is this—that the weight of the body in a soft bed presses on a larger surface than on a hard bed, and thereby a greater degree of comfort is enjoyed. Parents err in fancying that a very hard bed contributes to harden the constitution of their children; for which reason they lay them down on mattresses, or beds with boarded bottoms. A bed for young children cannot be too soft, provided the child does not sink into it in such a manner that the surrounding parts of the bed bend over and cover the body. The too great hardness of beds, says Dr. Durwin, frequently proves injurious to the shape of infants, by causing them to rest on too

few parts at a time; it also causes their sleep to be uneasy and unrefreshing. Whatever be the time chosen for sleep, it is evident that no person can with impunity convert day into night. Eight o'clock for children and eleven for adults, may be recommended as good hours for retiring to rest. It is well known that children require more sleep than adults; and more sleep is requisite in winter than in summer. The average duration of sleep which may be recommended for adults is *eight* hours; but much depends upon habit, and many persons require only six. It is scarcely necessary to observe, that, on rising in the morning, the strictest attention should be paid to washing the face, neck and hands; the mouth and teeth should also be well cleansed. The most simple powder for the teeth is finely brayed charcoal, a little of which will clear away all impurities, and preserve the teeth. On leaving the bedroom, the windows should be opened, and the clothes of the bed turned down, it order that the exhalations of the body during sleep may be dissipated. If, instead of this, the bed be made immediately after we have risen, these exhalations are again folded up with the clothes—a practice which is not consonant either with cleanliness or with health.

TEMPERATURE.

The fifth important requisite for health is that the body be kept in a temperature suitable to it.

The degree of heat indicated by sixty degrees of Fahrenheit's thermometer, or that of a temperate summer day, is what the human body finds it agreeable to be exposed to when in a state of inactivity.

There is no period of life at which warmth is of more consequence than in infancy. In a very young babe, the circulation is almost altogether confined to the surface, the internal organs being as yet in a very weak state. In such circumstance, to plunge the child into cold water, from an idea of making it hardy, as is customary in some countries, and among ignorant persons in our own, is the height of cruelty and folly; for the unavoidable consequence is, that the blood is thrown in upon the internal organs, and inflammation, bowel-complaints, croup, or convulsions, are very apt to ensue. A baby requires to be kept at a temperature above what is suitable to a grown person; it should be warmly, but not heavily clothed; the room where it is kept should be maintained at a good, but not oppressive heat; and it should never be put into other than tepid water. It should not be exposed to the open air for some days after its birth.

At all periods of life it is most desirable to avoid exposure to very low temperatures, especially for any considerable length of time. To sit long in cold school-rooms, or work-rooms, with the whole body, and especially the feet, in a chilled condition, is very unfavourable to the health of young people.

Clothing should be in proportion to the temperature of the climate and the season of the year; and where there are such abrupt transitions from heat to cold as in our country, it is not safe ever to go very thinly clad, as we may in that case be exposed to a sudden chill before we can effect the proper change of dress. Very fatal effects often result to ladies from incautiously stepping out of heated rooms in the imperfect clothing which they ludicrously style *full-dress;* all such injuries might be avoided by putting on a sufficiency of shawls, and allowing themselves a little time in the lobby to cool. The under-clothing in this country should be invariably of flannel, which is remarkably well calculated to preserve uniformity of temperature, as well as to produce a healthy irritation in the skin.

Wet clothes applied to any part of the body, when it is in an inactive state, have an instantaneous effect in reducing the temperature, this being an unavoidable effect of the process of evaporation which then takes place. Hence it is extremely dangerous to sit upon damp ground, or to remain at rest a single minute with wetted feet, or any other part of the body invested in damp garments. Dampness in the house in which we live has the same effect, and is equally dangerous. The chill produced by evaporation from the wetted surface checks the perspiration, and sends the blood inward to the vital parts, where it tends to produce inflammatory disease.

GENERAL OBSERVATIONS.

The fundamental principle of all efforts to improve and preserve health has been thus stated: "Man, as an organized being, is subject to organic laws, as much as the inanimate bodies which surround him are to laws mechanical and chemical; and we can as little escape the consequences of neglect or violation of those natural laws, which affect organic life through the air we breathe, the food we eat, and the exercise we take, as a stone projected from the hand, or a shot from the mouth of a cannon, can place itself beyond the bounds of gravitation." It may be added, that "all human science, all the arts of civilized man, consist of discoveries made by us of the laws impressed upon nature by the Author of the universe,

and the applications of those laws to the conditions—which are laws also—in which man and the particular bodies and substances around him are placed; nor, it is manifest, should science concern us more than that which relates to the conditions on which organic life is held by each individual."

Children, and How to Rear Them.

IT is a well-known fact that some of the greatest blessings we enjoy are the least appreciated, and this may be truly said of light. We are so accustomed to it that we fail to remember its importance, though did we but recollect that it is synonymous with life, we could not fail to be sensible of the inestimable value of this essential of our being.

Deprived of its wholesome and enlivening stimulus, children become pale and sickly in appearance, the blood is imperfectly oxygenated, and a proneness to disease or debility immediately arises.

A dark, dull room, or one from which light is more or less excluded, should by all means be avoided, for it is injurious alike to the eyes, health and spirits of children. But necessary as light is (it is the natural food of the eye), it requires regulating according to the age. During early infancy the eyes should not be exposed to a concentrated or strong light; the sun's light should be softened by window blinds, and an infant ought never to be held too near a lamp or candle.

The best arguments in favour of the beneficial effects of light are found in the facts that nearly the whole of the vegetable kingdom will cease to flourish if deprived of it, and that those children brought up in the dreary dark slums of cities, although quite as well fed as those of an agricultural labourer, are invariably puny, sickly creatures, without a vestige of colour in their cheeks.

THE PERNICIOUS CUSTOM which obtains so much amongst the lower and middle classes in the suburbs of living almost entirely in the basement breakfast-room cannot be too strongly condemned, where, as is invariably the case, it is dark. The room that is most in use should be "the best

room," not on account of the amount of furniture it contains, but owing to its being the lightest, and into this room the sun should be allowed to freely enter, all ideas of excluding it on account of the carpet being but false economy.

Notwithstanding, however, that a proper amount of light is necessary for a child when awake, equal care should be exercised in darkening the room when it (the child) is asleep, as too much light then will not merely prevent or interrupt sleep, but may act as a very injurious stimulus to the eyes and brain. It goes without saying that the nursery must, of course, have plenty of sunlight, and with this view should face the south, east or west, but there is another place about which great care should be taken —the school-room. There is no doubt that the influence of a sunless school-room is most baneful to a young mind, and the want of interest in their study, often displayed by children, might in many instances be traced to this cause.

BATHING.

Macbeth's maxim, "If it were done, when 'tis done, then 'twere well it were done quickly," is especially applicable to the bathing of children. There should be no nonsense about it. The object of bathing is not only for the purpose of cleanliness but as a means of invigorating the capillary circulation, and so fortifying the system as to enable it to resist atmospheric vicissitudes.

To do this, however, it is imperative that the child should not remain in the bath (presuming it is not warm) more than a minute or two, as when the body is immersed in water below ninety degrees there is a sensation of cold, a shrinking of the skin, and a rush of blood from the small capillary vessels of the surface to the internal vessels, which state of things should be speedily followed by a reaction by the heart and large vessels forcing the blood back again to the surface, and indeed to all the outlets; so that the skin glows and perhaps perspires, the secretory organs act more strongly, the liver and other organs show an increased activity, and there is a general feeling of liveliness and vigour.

But this will not be the case if there is any dawdling or delay, not only while in the water, but during the process of rubbing and drying, which must be performed with the greatest briskness, in order that the proper reaction, upon which the virtue of the bath depends, should take place: otherwise the child will get a chill, which will, in addition to nullifying the good, do it absolute harm.

Up to the age of three months infants should, in all weathers, be bathed in warm water, but, after that age, at the warm seasons, and dur-

ing Summer, cold may be used, provided the child be strong enough, and is not frightened, but if the experiment is attended with convulsive screaming and great distress, discontinue it and substitute a warmer temperature. In washing a very young child the head should always be the first part damped, and a flannel is preferable for that purpose rather than a sponge.

With regard to all children there are not two opinions on the subject of a daily bath given immediately on rising being beneficial, in fact it is a *sine qua non* of perfect health, provided, of course, the child is not too delicate, and for the elder ones a large sponge is a necessity, as by its use a much larger quantity of oxygen can be introduced into the skin than by any other means.

THE ADDITION OF SEA-SALT is a most desirable adjunct, especially when the hips are weak, but even when in good health its occasional use will add greatly to the tonic properties of the bath. It should be added in such quantity to a bath that the mineral ingredient is equal to that contained in salt water; it will be far more efficacious than a simple fresh water bath, as it combines the advantages of temperature with the stimulating action of the salt upon the skin.

The advantages of such a bath, taken at the time mentioned, are twofold. It inures the body to a greater degree of cold than it is likely to be exposed to during the rest of the day, and so proves most serviceable in protecting it from atmospheric influences; and it tends to remove irregularities in the circulation, and, by exciting the healthy action of the skin, may aid that organ in removing disease.

All, however, are not strong enough to stand the shock to the system, and not only those who are extremely weak, or who have any organic disease, especially the heart or lungs, but there may be some idiosyncrasy or condition of the constitution peculiar to the individual which would render it impossible. The invariable test is that if after a bath the child remains chilly, languid and dejected, or suffers from headache, then it is not beneficial, but if the sense of cold rapidly passes off and a glow of warmth and animation of spirits succeeds and continues for some time, the cold bath cannot fail to be productive of good.

SLEEP.

Although much has been written, and rightly so, on the subject of laziness, there is as much, if not more, to be said on the necessity of enough sleep, for it is as great a necessity as eating and drinking.

Infants sleep almost continually, and (in this we know most mothers will heartily concur) they cannot sleep too much, owing to the necessity for providing the materials for growth. When they are unable to sleep for any length of time their condition is unnatural, and shows us that they are suffering in some way or other, the cause of which should be ascertained and removed; but not by the use of syrups, elixirs, etc., which though they produce slumber, do not produce sleep.

For young children from twelve to fourteen hours' sleep is necessary, and this must be regular; the proper time for bed during the Winter months being about six o'clock, and in the Summer months about seven.

A proper desire for sleep is only obtained by a due amount of exercise, both mental and physical, which must not have continued sufficiently long to produce prostration. Exercise in moderation is most necessary before going to bed, but anything of a violent nature, like romping, should be avoided for at least half an hour before.

WITH REGARD TO THE HOUR at which children and others should rise, that must be determined by the time of their waking, and in order to wake at a proper time all that is necessary is that you go to bed at some regular early hour, and then, says an authority, "within a fortnight nature, with almost the regularity of the rising sun, will unloosen the bonds of sleep the moment enough repose has been secured for the wants of the system." To remain in bed after this, to indulge in that short morning doze into which to many allow themselves to fall because it is not, they think, quite time to get up, is a baneful practice.

Care should be taken with regard to the quantity of bed-clothes indulged in, too much clothing having the effect of relaxing the body, and it is right therefore to have only sufficient to enable the individual to sleep, for it is better to wake with an inclination to draw the clothes round you than so feel oppressed by their weight and heat and a desire to throw them off.

WITH REGARD TO THE PROPER POSITION OF A SLEEPER all are agreed that it should be on the right or left side, because if you sleep on your back, especially soon after a hearty meal, the weight of the digestive organs and that of the food, resting upon the great vein of the body, near the backbone, compresses it, and arrests the flow of the blood more or less. If the arrest is partial, the sleep is disturbed, and there are unpleasant dreams, a state of things carefully to be avoided when we remember that "the man who dreams does but half sleep. The child who dreams scarcely sleeps at all."

TOO MUCH ATTENTION cannot be paid to the proper ventilation of sleeping-rooms. In too many cases this important subject is entirely neglected. The sleeper retires to rest in an apartment from which every effort has been made to exclude the outer air—until it seems almost hermetically sealed—and rises with a dull headache, and a feverish, unrefreshed sensation to go about the duties of the day.

ON CATCHING COLD.

It is a very common, but a very great, mistake to attach little importance to catching cold. How frequently we hear the remark in reference to some one being indisposed, "Oh, it's nothing; only a severe cold." Considering that in adults severe cold is the cause of one-half "the ills that flesh is heir to," it will readily be understood that colds with children are of the greatest consequence, for, in the language of one whose name is the synonym for nursing, "It is as easy to put out a sick baby's life as it is to put out the flame of a candle."

The most common kind of a cold is that in the head, professionally described as *catarrh*, which consists of inflammation of the mucous membrane of the air passages, and is ordinarily caused by the child having been exposed to a draught, having got its clothes wet and not been able to have them changed, or by not being sufficiently warmly clad when the body is getting cool after being heated. The latter is the most to be feared, as in this condition the body is incapable, from exhaustion, of reaction, and the exposure intensifies the depression.

WET CLOTHING does not frequently produce "a cold" if the child is walking or running about, and is able to get the things changed when the active exercise ceases, and avoids all exposure for some little time; but where exertion has been indulged in, and the body is in a state of perspiration, then, if the child receives a chill from wet feet or any other cause, and does not continue its play or its excessive exercise, *catarrh* is almost inevitable.

When it is remembered that a neglected cold sometimes produces bronchitis, pneumonia, quinsy, rheumatism, erysipelas, toothache, neuralgia, inflammatory fever, consumption, etc., it is scarcely possible to impress upon mothers too strongly the great necessity for extreme care in this matter; and as prevention should be much more easy when the cause of a complaint is understood, I propose to try and explain in as simple language as possible the why and wherefore.

The action of cold is to partially close the pores of the skin, check the natural perspiration by constricting and obstructing the vessels of the skin, and so throw more blood inwardly, producing internal congestions; for the outer skin being incapable of performing its functions, and perspiration being an absolute necessity, the inner skin, or mucous membrane, has to do the work, and hence the inflammation.

THE EFFECT OF COLD is felt to a greater or less degree according to the capillary circulation. If this be weak, or be rendered so by excitement, exercise, or by sleep, the danger is increased; consequently children—and any one else, for matter of that—are most susceptible to cold when coming out of a hot room, after being unduly heated by running, or when sleeping.

From this it will be understood that the chilling influences enumerated derange the balance of the circulation, and by determining a corresponding amount of congestion inwardly, fix it in some part previously weakened and made susceptible to disease; or, in still plainer language, the cold flies to the weakest part, which accounts for one person getting rheumatism, another congestion of the lungs, a third a sore throat, and a fourth, perhaps merely a cold in the head or chest.

TO CURE A COLD is to restore the action of the skin and induce perspiration, and this, if done at the proper time, when the symptoms are first observed, is exceedingly simple. People may sneer as they will at the mention of the word gruel, but a basin-full of hot gruel, made thin, and taken when in bed, will invariably arrest an ordinary catarrh. If the chill be severe, the child's feet should be placed in warm water, a little extra clothing be placed on the bed, and the patient allowed to lie in bed a little longer than usual the next morning; but the apartment must not be too warm or close, or the additional clothing be too great, as, though the cure may be accelerated thereby, the susceptibility is increased, and the child rendered more liable to a recurrence of the attack.

To those who will not believe in anything old-fashioned or simple, the plan of a "wet sheet pack" will be found equally efficacious. This is managed by spreading three blankets on the bed and putting on on the top a sheet, which has been saturated in hot water and wrung out. The child is then placed upon the sheet, enveloped in it, and the blankets wrapped tightly around the whole body excepting the head, and allowed to remain in this situation for about an hour, when a a quick sponging of cold water should be given, followed by a brisk and thorough rubbing with dry towels.

ANOTHER REMEDY believed in by many of our medical brethren is the "dry" plan, which, at any rate, has the merit of simplicity, for it consists in merely abstaining from every kind of liquid until the disorder is gone.

Although opinions may differ, however, as to the precise method of cure, and any of those given will be found equally efficient, there is no difference of opinion as to the cause and prevention. The too frequent cause is simply the result of carelessness or imprudence in not protecting the body against the variation of temperature, an insufficient use of cold or warm water to the body, or plainly, uncleanliness, sleeping under too much clothing, or by sleeping in badly-ventilated rooms; but the first mentioned, the passing from a hot room out into the open air, or into a room where the temperature is less, without being suitably attired, is the most frequent and the most to be guarded against with children.

The prevention of cold is best achieved by diminishing the susceptibility of the system by abstemious living, taking regular and daily exercise in the open air, and a morning bath of cold water if the child be strong enough, and if not, a tepid one; but the best prevention and cure for colds is "the cold water cure."

TEETHING.

is one of the most distressing of the ordinary ailments of children, for it comes to them at an age when they are incapable of making the nature of their sufferings known, and as they do suffer most acutely sometimes during the process of dentition, it is very trying to mothers and nurses to have to witness their torture and be unable to alleviate it because the poor little mites cannot explain their symptoms.

Being one of the very common ills that flesh is heir to, it is a time frequently regarded by some as more troublesome than important—a great mistake, to prevent which a simple statement showing the action of one of the phases of the disease may be advisable. The chief disorders of the first set of teeth are caries and inflammation in the periosteal membranes, terminating in abscess, or what is commonly called *gumboil*. The first effect of inflammation in the periosteum is to create pain, tenderness and swelling in that part of the gum in close proximity to the tooth, and an effusion of fluid between the fang and its investing membrane, which is thus converted into a sort of cyst or tiny sack of skin. Repeated attacks of inflammation at length end in the formation of pus, which either bursts through the tumour in the gum or may be removed by lancing. Sometimes after the abscess has burst or been opened, a fungus springs up from the diseased membrane lining the cavity. With some children the

presence of the abscess having produced absorption of a portion of the alveolar process at its lowest part, it effuses its contents through the aperture thus formed, and matter forces itself along the surface of the lower jaw, and forms an external tumor near its base.

WITH REGARD TO THE PROCESS OF DENTITION in actual infants, the time at which it takes place is naturally subject to slight variation, when it is stated that many medical men give instances in their experience of children being born with teeth, or having cut them almost immediately after birth—Louis XIV., of France, and Richard III., of England, being historic cases in point; the usual time, however, when babies begin to be troubled with the advent of teeth is at the seventh month, the period of the first detention lasting up to the age of two years or two and a half years.

The symptoms of teething in a healthy child are that for some time before the gums are much swollen, there is an excessive flow of saliva from the mouth, and the child indulges in what is known to most as "dribbling," at the same time evincing a very strong desire to drag anything upon which it can fix its tiny little clutch into its mouth, while, if we place our finger into its mouth we perceive at once a decided attempt to bite, which affords a relief to the irritation of the gums. Where the child is inconvenienced only to the extent described there is no remedy required provided there is no constipation, but where this is the case small doses of castor oil are the safest. As to the article it should be given to suck, I personally prefer an ivory ring or a "finger" of crust of bread, great care being observed in the latter case that it is taken away before there is a possibility of its being broken or bitten off.

WHEN THE CHILD IS EXTREMELY RESTLESS, cross and uneasy, crying bitterly without any apparent cause, and refuses all ordinary attempts at pacification, its suffering is very considerable, which is increased by its ineffectual efforts to sleep for any length of time. The cheeks become flushed at this time, and if the local inflammation continue to increase the gums may ulcerate; in this case apply a little borax and honey to them; but where the irritation continues and the pain is obviously great it will be necessary to lance the gums, for which purpose it is almost unnecessary to add the services of a surgeon should be secured at once. At this time it is more than ever necessary to keep the bowels well open, a mild attack of diarrhœa being far more preferable under the existing circumstances than the reverse state of things.

ALL FOOD REQUIRES TO BE CAREFULLY CHEWED in order that the various organs may perfectly perform their proper functions, and this can only be the case when the meat, or whatever it may be, is broken into minute

portions and duly mixed with saliva, without which it will not be properly digested. The horrors and evils of indigestion are too well known to need commenting upon here, but the necessity for a due attention to the mastication of food by children will be seen when it is stated that a weak stomach acts tardily and imperfectly upon anything introduced into it not properly chewed; and the consequences are, the warmth and moisture of the stomach evolve gases, acids are formed, and then follow those distressing symptoms such as loss of appetite, flatulence, furred tongue, etc.

The period of "teething" is more than interesting, from the fact that, at this stage of child-life, the whole organization seems to undergo a transition. The features, hitherto more or less expressionless, become decided and distinct; the eye becomes endued with expression, through which the mind seems to speak, as it were; the round appearance of the facial outline appears elongated, the result of the teeth expanding the jaws; the forehead is perceptibly developed, and, in short, the entire face assumes an animation previously unknown, but most precious to mothers, on account of its being the ordinary time when "baby is beginning to notice."

THE ORDER IN WHICH TEETH usually make their appearance is, first, the two central incisors of the lower jaw appear; then shortly after those of the upper jaw, followed by the lower lateral incisors, and then by the upper lateral incisors. At the age of a year or fourteen months the four first molar teeth should begin to show, and at the sixteenth to the twentieth month the lower and upper canine teeth, followed by the four last molars.

Although the suffering of infants from the process of dentition arises mainly from irritation of the gums, owing to the teeth working their way through, it is not in the mouth alone that pain is caused; and where this is excessive, or in children whose constitutions are naturally irritable, the irritation is reflected by the nervous system to some other organ or system of organs.

THE MOST ORDINARY EFFECT of this is stomach-ache, or diarrhœa, with griping pain, which, if in a mild form, is the least to be feared of all the unpleasantnesses arising from teething; and though its violence may be moderated, it should not be entirely arrested. Under these circumstances, a child soon gets weak and thin, and its flesh soft and flabby; but, generally speaking, this need not (except, of course, in an extreme case) be viewed with alarm; for, as soon as the teeth are through, nature soon rights itself, and the little one will resume its wonted good looks. When, however, the symptoms are very distressing, by the quantity and frequency of the discharge, a chalk mixture, with a drop or two of laudanum to the ounce, according to the age of the child, may be given, in the event of a

medical man not being procurable. Where there is a great pain and flatulence, an occasional warm bath, and the use of liniment, composed of half a drachm of laudanum to two ounces of compound camphor liniment, or a mustard or linseed meal poultice, composed of one-third of the former to two-thirds of the latter. When the foregoing symptoms are accompanied by vomiting, it is exceedingly troublesome, and if the sickness is not relieved by the division of the gums, it should be checked by administering a half-drop or a drop of laudanum.

BESIDES THE MALADIES mentioned that are the outcome of teething, there are many others, such as eruptions of the skin, spasm of the glottis, and affections of the nervous system, generally of too complicated a nature to treat in this article, as the remedies necessitated are as complex as the diseases; but there is one serious disorder connected with dentition unfortunately too common. I allude to convulsions, the treatment of which should be known to all.

CONVULSIONS in their mild form consist of muscular twitchings of the face, accompanied by an obvious difficulty in breathing and a rolling of the eyes. When severe, the child becomes insensible, and the muscles of the head, neck, and extremities are convulsed in various directions. The eyes are insensible to light, and turned rigidly up to one side. The appearance and symptoms vary, of course, for, in addition to those named, with some children the face is congested, but sometimes pale, the lips livid, and there is frothing at the mouth. The hands are usually tightly clenched, and the thumbs turned inward, with the fingers on them, and in some cases the soles of the feet are turned together, with the great toe bent into the sole.

The treatment for convulsions is, as a rule, a warm bath, and, in the absence of a doctor, the best thing to be done is to immerse the child in warm water of about ninety degrees temperature for about ten minutes or a quarter of an hour, applying at the same time a cold, wet towel for two or three minutes to the little sufferer's head. Previous to the bath, which will take at least a few minutes to get ready, loosen all the clothing about the neck, chest and body, raise the head, sprinkle the face with water, and admit plenty of fresh air.

WITH REGARD TO THE GENERAL TREATMENT of children during teething, their heads should be kept cool and their feet warm, and, if the weather will admit, they should be bathed in cold water, especially about the head, and taken out daily in the open air. At night it is equally essential that their heads be kept cool, and therefore no caps or coverings should be used.

As before stated, diarrhœa during dentition, unless very severe, should not be stopped; but regarded as an effort of nature to relieve congestion to the head; and where the opposite effect is the case, purgatives should be avoided, and the bowels regulated by suitable diet; in obstinate cases by injections. Constipation in infants may be almost entirely attributed to defective diet, and if, while nursing, mothers and nurses would carefully avoid any article of food or drink of an indigestible or stimulating character, this ailment would be comparatively unknown.

WHOOPING-COUGH.

This disease, almost absolutely confined to infants and children, is, luckily for them, more distressing in its symptoms than dangerous in its effects, a case of whooping-cough, *pur et simple*, being rarely fatal. Like croup, it is more common with very young children. the usual age when they are more subject to it being from two to ten years; but, unlike croup, it is more common to girls than to boys, and appears but once in a lifetime, though cases have been known were the cough continued daily at a certain hour for several months, and, after ceasing for some time, returned for two successive seasons.

The symptoms which usually precede this malady are those of ordinary influenza. First and foremost there is a languor, restlessness, feverishness and unaccountable irritation, except that the little one is thought "to have caught a slight cold," then loss of appetite, sneezing, coughing, follow, with a running at the nose; this is in the case of an ordinary and not severe attack. Where the disease is in an aggravated form the fever is more intense, the thirst greater, the pulse quicker, and the oppression and distress in proportion, the cough very frequent and painful, dry at first, but with excessive expectoration afterward. This may be called the first stage of the disease, and is the customary prelude to whooping, but it is perfectly possible to dispense with these preliminaries, and for a child to be suddenly seized with the too well-known cough. These symptoms ordinarily continue from ten days to a fortnight.

THE SECOND STAGE is marked by the dying-out of the symptoms of cold and the commencement of the fits of coughing, which are best described as a number of expirations made with such violence, and repeated in such quick succession, that the child seems almost in danger of suffocation. The face and neck are swollen and livid, the eyes protruded and full of tears; at length, one or two inspirations are made with similar violence, and by them the peculiar whooping sound is produced; a little rest prob-

ably follows, and is succeeded by another fit of coughing, and another whoop, until after a succession of these actions, the paroxysm is terminated by vomiting, or a discharge of mucus from the lungs, or perhaps both. The duration of this stage is usually from six weeks to a couple of months, but sometimes continues for a much longer period, the disease, in some cases, lasting from the beginning of Winter until the end of Spring.

The debilitating results of the disease depend to a great extent upon the violence and duration of the attack, and the strength or weakness of the constitution, but as a rule, if there are no complications, these are of no great moment. The frequent vomiting decreases the appetite, and disturbs digestion, which interferes with nutrition, and the child naturally loses flesh, which is more or less flabby, and the skin is unusually dark, especially underneath the eyes.

THE SUBSIDING OF the attack is marked by the fits of coughing becoming less frequent, though possibly they may be as fierce as ever, the paroxysms lasting from a minute to a quarter of an hour. In proportion to their violence and duration will be the child's breathlessness and fright and its efforts to respire. If in a recumbent position it will suddenly jump up and seize hold of whatever or whoever is nearest, in order to be assisted in overcoming the spasm. When the fit is over the child appears exhausted, and requires a short rest to recover itself; but then and during the interval to the next cough, it is comparatively easy and cheerful, often playing about as usual, and not averse to food, except where the case is a severe one, when extreme languor supervenes.

The period at which these paroxysms recur varies considerably; during the early part of the attack they are very frequent—about every half hour, and in some extremely severe cases as often as every ten minutes—the chief cause of their return being the accumulation of mucus. Consequently, if this be got rid of by the coughing, the fit will be light; but if it is expelled with difficulty the efforts will be greater, and the cough renewed almost immediately. These fits are produced by many things—a hearty meal, a fit of passion, crying, fright or laughter, will either of them be sufficient to bring on an attack.

Although we have stated that this disease is rarely attended with fatal results, it must be distinctly understood that this statement applies to whooping-cough *per se:* it is perfectly correct, but for fear any one should not be sufficiently careful, it is a disorder which, if improperly treated, or if the case be one of an extremely acute character, may lead to something of a complicated and highly dangerous nature.

IT IS A COMPLAINT which lends itself a great deal more to careful nursing than to an elaborate course of medicine, for it will run its course, and requires guiding and watching more than checking, great care being necessary to note the symptoms, lest they assume a conspicuous or alarming character, and by appropriate treatment prevent the affection having those complications alluded to which constitute it a disease of danger. On the slightest appearance either of inflammatory affection of the lungs or of a tendency to convulsion a medical man should be sent for immediately.

During the first stage an emetic of ipecacuanha, followed by an expectorant every four hours, should be given, the latter consisting of ipecacuanha wine, sirup of squills, a little sirup of white poppies and almond milk, and some mild aperient, such as castor oil, or salts and senna, the emetic only to be repeated occasionally. The rooms to which the child should be confined should be of an equable temperature, about sixty-five degrees, the bedroom being ventilated during the day and the sitting-room during the night; but the windows of the apartment must on no account be opened while the patient is in them.

When the second stage arrives, while proper attention is paid to temperature, the cough will be found much slighter and the expectoration much less than if the child were permitted to be exposed to the external air, the emetic being continued occasionally, and also the mixture, with a few drops of laudanum added to it.

WITH REGARD TO CHANGE OF AIR, there is no doubt that while the attack is unsubdued, no matter what the weather may be, the patient should be confined not only to the house, but to rooms, as already stated, but when the disease is on the wane the change from a cold situation to one of warm temperature is most beneficial in accelerating a return to convalescence, though the greatest caution is needed in this matter.

The diet of the child during the entire illness is a most important feature in connection with the treatment, and should consist chiefly of milk and farinaceous foods, meat being of too heating a nature, unless the child is very weak and low, in which case tolerably good broth will be the best mode of giving animal food.

VACCINATION.

Unfortunately that dangerous and much dreaded malady—smallpox—is prevalent, and it would be well for parents and others to be reminded of the necessity of revaccination every seven years.

It is astonishing that though this discovery is undoubtedly one of the very greatest blessings to poor humanity it should now be thought so little of, and that there should be some who actually decry and refuse to accept it as such, when there is no doubt that if every one had followed the instructions as to revaccination, by this time smallpox would have ceased altogether.

No language can be too strong to depict the horrors of this disease, or to denounce the culpable ignorance of those who, blinding themselves to the blessings of vaccination, set the law at defiance and thus endanger the lives of their fellow-creatures. Supposing it could be proved (which it cannot) that in some cases it has been the means of imparting disease, the overwhelming number of cases where it has not, but has been a preventive of this terrible malady, ought to show its necessity on the beneficent principle of studying the greatest happiness of the greatest number.

To children smallpox has ever been distressingly fatal, and though it is impossible to give any course of treatment for its cure in an article of this character, as so much depends upon the violence of the case, the state of the patient's constitution, and the stage of the complaint, it may be said that the old practice of close, hot rooms, warm clothing, and hot drinks are proved mistakes; cool, well-ventilated apartments, comfortably cool bedclothes and cooling drinks having been found to be not only more pleasant but more successful in their results. When the disease first makes its appearance, if the fever be moderate and no professional advice be procurable, the patient should be confined to bed, and cool drinks and a dose or two of purgative medicine administered.

FEVERS.

Measles.—An acute specific disease—febrile and infectious, ushered in with catarrhal symptoms and characterized by an eruption on the skin, which appears usually on the fourth day.

Usual Symptoms.—After a period of incubation varying from twelve to fourteen days (the period of incubation in cases produced by inoculation is seven days), there is manifested alternate chilliness and heat, a quickened pulse, aching in the limbs, slight headache, soon followed by redness of the eyes, coryza, huskiness and hoarse cough. On the fourth day there is an eruption of soft, circular, very slightly elevated dusky red spots, which appear first on the forehead, and extend over the face, neck, and whole body. The spots gradually coalesce and present a peculiar crescentic or horseshoe shape. The spots disappear on pressure.

They attain their greatest intensity on the fourth day from their invasion, and by the seventh day they fade away with a slight desquamation of the cuticle. As a rule the fever does not abate on the appearance of the eruption.

The contagion of measles is active during the prodromic stage. Red spots are visible on the velum palati four, five, or six days before the eruption appears on the skin.

Occasional Symptoms.—There may be no prodromata whatever, or the attack may be ushered in with convulsions (especially in children), or there may be delirium, or there may be a great amount of fever, or there may be and often is sore throat; more rarely severe headache, and sometimes absence of the coryza.

The eruption may be scanty, or most abundant and confluent, but the quantity of the eruption *per se* does not affect the gravity of the attack; the colour of the eruption may be dark, constituting so called "black measles"; there may be petechiæ, which do not fade on pressure and resemble purpura; these do not *per se* affect the prognosis. Miliary vesicles are often present, and when abundant the amount of desquamation will be greater.

Average Mortality.—One in fifteen.

Prognosis.—If uncomplicated, favourable. Unfavourable signs are great fever, great dyspnœa, sudden vanishing of the rash, together with an access of delirium; brown dry tongue, with special severity of some two or three symptoms; petechiæ, with a typhoid form of fever. Capillary bronchitis and pneumonia are the most frequent proximate causes of death.

Treatment.—The child must be kept in bed in a large, well-ventilated room, free from drafts—a point of vital importance, looking to the frequency and danger of chest complications. The diet must be low. Tepid drinks may be freely given. It is very important in measles, as in all infectious fevers, to remove all discharge and soiled linen instantly; the motions should be passed into vessels containing chloride of lime, carbolic acid, or Condy's fluid; this with ventilation will go far to prevent infection. There is no objection, if it be grateful to the patient, to have the body gently sponged with warm water; and if itching be much complained of, inunction with unsalted lard is useful. Cough is often the first troublesome system which requires special treatment. A mixture containing citrate of potash and ipecacuanha wine with a few drops of nepenthe or Tinct. Camph. Co., will usually quiet this. If the fever runs high, the weak mineral acids sweetened and largely diluted will be very grate-

ful. Or a mixture of citrate of potash and Rochelle salt may be given in an effervescing form. If the fever be of low type, with brown tongue and failing powers, large doses of chlorate of potash will be useful, and stimulants will be required. Yelk of eggs beaten up with wine is excellent in such cases. Purgatives, as a rule, are not required; if employed they should be mere laxatives, remembering the diarrhœa which usually sets in toward the close of the disease. In cases attended with much nervous excitability and convulsions or delirium, bromide of potassium in full doses will be useful. This drug will also procure sleep, and is better for the purpose than any opiate. Sudden recession of the rash attended with an onset of delirium should be met by plunging the child into a bath containing mustard, and leaving it in until the surface becomes red, which usually occurs in a few minutes. The child should then be rolled in a blanket, and the strength supported by nutritious diet, and stimulants are needed. For laryngitis, a sponge wrung out of very hot water should be applied over the larynx, and inhalation of steam encouraged. Pneumonia will call for a stimulating embrocation over its site, and the administration of stimulants, expectorants—carbonate of ammonia with senega is the best.

Lung and indeed all complications occurring during the early stages are best treated by endeavouring, with external stimulants, *e.g.*, the mustard bath, and internal gentle diaphoretics, to get the rash thrown out freely. Later on this is, of course, inadmissible, and the strength must be supported in every way.

As the disease declines the diet may be more solid, and tonics will be of service. Convalescence from measles is often slow, and as discharges from the ears, eyes, and nose are not uncommon, sea-air is very beneficial in re-establishing the health. Such discharges will require astringent lotions and the use of cod-liver oil and steel.

SCARLATINA.

An acute specific disease—febrile, contagious, and infectious, and accompanied by a peculiar eruption of the skin. After a period of incubation varying according to different authors at from four to forty days, and probably averaging from four to six days, there appears in children vomiting; in older persons sore throat, and the onset is usually sudden. It is common for adults to be able to fix the hour in which the sore throat began. In children severe vomiting often prognosticates severe throat affection. Next there is noticed fever, a frequent pulse, commonly 130-170, a flushed face, a high temperature (103 or 104 degrees F., even on the first

day), hurried breathing, furred tongue, hot skin and thirst. At the same time there is lassitude and restlessness, headache and at night delirium. On the second day, usually about the root of the neck and upper part of the chest, appears the eruption, which is a scarlet efflorescence consisting of innumerable red spots at first separated by natural skin, but soon coalescing and producing a general redness; the skin is rendered pale by pressure, but the redness immediately returns—the rash is not elevated to the touch. It is most abundant about the hips and loins, and the flexures of the joints—in fact where the papillæ of the skin are largest. The eruption reaches its maximum intensity on the third or fourth day; by the fifth it has begun to fade, and by the eighth it disappears. It goes off in an order corresponding with its invasion. Miliaria are often present, perhaps more commonly in adults than in children; they in no wise affect the prognosis. The sore throat is very important, especially in children. A child may die from throat disease without any complaint about its throat having been made. The throat should therefore always be carefully examined. The tonsils will usually be found enlarged and inflamed, and often coated with a thick white tenacious mucus.

CROUP.

This disease is characterized by difficulty of breathing; hoarseness; a ringing cough, which, when once heard, will be distinctly remembered; the cough is followed by a "*crowing* inspiration."

There is inflammatory fever; frequent and hard pulse; thirst.

The attack is most liable to come on in the night—either altogether unexpected, or preceded by a cold, sore throat, or catarrh.

TREATMENT.—Apply to the throat very cold wet cloths well covered with dry. Keep the child in bed. Rub with the dry hand the back and limbs, and continue this until a hot bath is made ready; renewing the cold cloths to the throat every few moments. When the room is made very warm and the bath at hand, place the child in the hot water, as hot as can be borne, and rub the chest and abdomen and the whole body very briskly. Add more hot water, and keep the body (even to the neck) immersed.

Have a dry hot sheet ready in which to wrap and rub dry the little patient. If fever is high, now put on the abdominal bandage wrung from warm water. Cover well with dry flannel—a small blanket or even a good-sized one is none too much. Apply again the cold wet cloth to the throat. Keep the feet warm; and, if the breathing is not easier now, fo-

ment the throat and upper part of the chest for twenty minutes alternately with the cold compress.

Pat and rub the back and chest. Manipulate the arms and legs. Give drinks of hot water and of cold. Follow the symptoms with "all diligence." Do not relax effort until the breathing is liberated. If the bowels are not free, give full warm enema.

If there is tendency to coldness of extremities, give hot foot bath occasionally; also apply dry flannels heated very hot to the throat, if they seem more agreeable than the hot fomentation.

Keep the patient in a warm well-ventilated room. Give only baked apple, or toast water, or gruel as food, until the symptoms yield positively.

I have been told by my patrons that it often occurs in their domestic practice with children, that, by the time the patient is rubbed with the dry hand, having the cold compress on the throat until the hot bath is made ready, there is no need of the bath; the breathing is relieved. But it is not always so. I have treated cases of what is called "membranous croup," and it lasted persistently for days. I never lost a case of croup. But it is a dreaded disease, and justly so.

MUMPS (PAROTITIS).

This disease often prevails epidemically.

It usually affects children and young persons, and is contagious.

The parotid gland swells; swelling beneath the ear, the chin, and all around the neck, deforming the countenance curiously.

It affects one side only sometimes, but usually both.

The swelling is hot, tender, and painful; the lower jaw can scarcely be moved. In about four days the disease begins to decline, and usually lasts in all about ten days.

Sometimes the swelling suddenly becomes transferred to the mammæ in the female and to the testicle in the male, and may oscillate between the throat and the mammæ or testicle. Metastasis to the brain is known to take place also, but this is rare.

TREATMENT.—Very little treatment is necessary. Apply warm cloths to the swelling; let them be kept on constantly.

If there is general feverishness, a tepid sponge bath and enema of tepid water. A little gruel or bran tea as food.

Keep the patient comfortably warm and quiet. If metastasis to the parts named occur, a warm sitz bath or fomentation to the affected region will give relief. Keep the feet warm.

Should the brain become affected, give *very hot* sitz and foot bath ten minutes. Follow this with enema of hot water. Apply cool cloths to the head, or, if more agreeable to the patient, warm spongings. Let the patient be kept in bed and seek to induce perspiration by applying bottles of hot water to the back and feet and drinking of hot water.

In fact, the treatment now should be the same as for inflammation of the brain.

DIPHTHERIA.

In this to be dreaded and terrible disease, a false membrane forms in the throat, and if the larynx becomes affected the chances of recovery are very few indeed. Frequent vomiting, diarrhœa, hemorrhage from the nostrils or elsewhere, frequency and fulness of the pulse, convulsions, delirium, and coma, are symptoms which denote great danger. Occasionally the muscles of both the upper and lower limbs are affected. The chief objects in the treatment are to palliate symptoms, and support the powers of life by the judicious employment of tonic remedies, conjoined with alimentation and alcoholic stimulants. The latter are given in large quantities. The best advice to give to mothers in regard to diphtheria is, *send instantly for the doctor*. Do not delay one moment!

ACCIDENTS.

It is an accepted axiom that accidents will happen, no matter how well regulated the household; and though much has been written with a view to avert the more serious calamities supposed to be the outcome of accident, but which are invariably the result of carelessness, children still manage to burn themselves at fires, to scald themselves with hot water, to cut their fingers, to break their heads, etc.

As a rule, the remedies required to be of any service should be applied at once; and it is, therefore, no earthly use suggesting antidotes or appliances only to be met with in a doctor's surgery. I shall, therefore, in the few suggestions I make, more particularly dwell upon those simple remedies which may reasonably be expected to be found in every home.

In the summer months, when the weather is seasonable, the heat is oftentimes sufficient to cause children to bleed at the nose. In such cases, if the bleeding be not excessive or too frequent, it is not desirable to stop it, as, when caused by an undue fulness of the blood-vessels of the head, it affords great relief. When, however, the bleeding is the result of a knock or blow, cold applications should be applied to the nose or forehead, and the child kept standing in the open air.

Another excellent way of arresting the bleeding is to cause the arms to be raised above the head, and kept so for a few minutes, which will usually have the desired effect. In the event of these remedies proving ineffectual, and it being evident that the bleeding is dangerous, the nostrils must be plugged with pieces of linen rag made into stoppers of oval shape, about one inch in the long diameter and half an inch in the transverse, sufficient linen being left hanging in order to withdraw them when necessary. The great thing to determine in cases where the bleeding is not the result of accident is whether it be a disease, or Nature's mode of assisting the removal of one; and this, of course, can only be arrived at by a knowledge of the child's state of health at the time.

CUTS.

With regard to the bleeding caused by a cut from a knife, or something similarly sharp, if it be only slight, after being bathed with cold water, the edges or sides of the wound should be brought together, and bound with narrow strips of arnica plaster, if this is to be had; but if not, a simple band of linen, smeared with the white of an egg, will be the best substitute. If the band becomes tight, and causes pain owing to the swelling, don't remove the bandage, but insert the blade of a pair of scissors underneath the binding on the opposite side to the wound, and cut the linen across. Where it is necessary to remove the strapping on account of there being pain and throbbing, the part affected should be soaked in warm water, and a soft, warm poultice applied. When the wound does not show signs of inflammation, and the discharge is good, that is to say, resembling cream in consistence and custard in colour, the bandage may be put on again; but when the edges are inflamed, or pale and flabby, and the discharge thin and objectionable in its odour, a single strap of adhesive plaster should be used to keep the edges together, and this should be covered with a warm poultice.

When a mishap of this kind occurs, it is either a vein or an artery that is cut. In the former case the blood is dark-coloured, and will flow in a steady stream, which can usually be stopped by the application of cold water or ice, and by exposing the wound to the open air. In the latter the blood is bright-red, and flows in jets, when, if the bleeding is excessive, a strong bandage should be tied around the limb, just above the wound, and between it and the heart, and compressed sufficiently tight (by means of a stick inserted underneath and twisted) until the circulation be stopped.

When the wound is not a clean cut, and there is any foreign substance, such as dirt, hair, etc., it must be carefully removed by sponging with cold water.

BURNS.

Accidents caused by burning demand immediate attention, and can only be cured in one way—by excluding the air from the part affected. Where it is a case of the clothes having caught fire, envelop the child in the heavest article available, such as a blanket, tablecloth, curtain, etc., and roll it over and over on the ground until the flames are extinguished, in the event of there not being sufficient water at hand for that purpose.

This done, the charred garments should be quickly but most gently removed, and cut away, instead of being torn from the body, in order that the damaged skin should not be unnecessarily irritated; but where a piece of the underlinen happens to be burnt into the wound, or is not easily detached, cut away all around it, and leave it to come away afterward. Then immediately cover the injured surface with something that will exclude the air, either with flour sprinkled thickly over the wound, with cotton-wool steeped in oil, or with a piece of linen on which is spread a layer of soap about the sixteenth of an inch thick. When procurable, a better remedy than either of those mentioned, is to apply strips of lint saturated in carron oil, which dressing should be left on as long as possible, until they become loosened or objectionable from the discharges, it being most desirable that these bandages be changed as seldom as possible, as their removal is apt to cause detachment of portions of the new skin, which is most painful and undesirable. When there is much discharge it must be removed, and the place kept as clean as possible.

When the injury is of an extensive character, and a shock ensues, the shivering is best checked by the application of hot bottles to the hands and feet, and the administering of hot drinks—either warm sherry or warm brandy and water. To prevent disfigurement from accidents of this nature, the child must be carefully watched until the part is completely healed, and must be prevented from sitting or lying in anything but a straight posture, to avoid contraction of the skin.

The danger attending burns depends more upon their superficial extent than the depth of the injury—those to the body, head or neck being much more dangerous than those to the hands or feet, the neck being the most risky portion of all.

Where the part is simply blistered, though these be extensive in character and large in number, it is comparatively of little moment as long as they

are whole. They must consequently not be broken, but allowed to remain, and the fluid to accumulate till the new skin forms underneath. When this formation takes place, the part becomes distended and painful, there is a red line round the edge of the blister, and the contained fluid looks milky. It may then be let out by puncturing with a needle, so that it all escapes.

SCALDS.

Scalds from hot water, as a rule, are not so severe, as excepting in extreme cases, the scurf skin is only raised like an ordinary blister, and the dressing being wet, can be removed without difficulty. Any of the remedies prescribed for burns are equally efficacious for scalds, but if the scalded surface be instantly covered with cotton-wool, it is, if the accident be of a slight character, sufficient. Another admirable remedy, more particularly on account of its usually being "in the house," is lard. That specially prepared by chemists is, of course, the best; but this only means the ordinary kind divested of the salt by washing. It should be thickly spread on pieces of old, soft linen, and when placed on the scald or burn, be kept in its place by bandages of lint, or better still, by strips of calico, torn from an old garment, always bearing in mind that the great thing is to protect the damaged part from the air, and remembering on no account to apply cold water or similar cold bandages.

BRUISES.

Bruises from knocks and tumbles are by far the most frequent of the numerous accidents of the nursery, and where the injury is slight and the skin not lacerated, a warm application of arnica (which should always be kept where there are children) and water, in the proportion of one part of arnica to ten of water, is advisable; but in the absence of this, the old-fashioned remedy of covering the bruise with fresh butter should be resorted to.

Jammed fingers, through the unexpected shutting of a drawer or door, though not usually looked upon as at all serious casualties, may sometimes be attended by the most serious consequences, for if all the parts of the end of the fingers be injured, the whole (bone and flesh) may mortify. In ordinary cases of this kind, the best and quickest way of obtaining relief, is to plunge the finger or fingers into warm water as hot as the child can bear it. By this means the nail is softened, and yields so as to accommodate itself to the blood poured out beneath it, and the pain is speedily lessened; the finger should then be covered with a bread and water poul-

tice, pending the surgical treatment necessary where the fingers are badly crushed.

Instant care and attention in such cases will often prevent the loss of the nail, a result to be avoided if possible, since the formation and growth of the new nail are necessarily slow, and changes of shape frequently occur, sometimes resulting in permanent disfigurement.

Hints to Housekeepers.

CHOICE OF ARTICLES OF FOOD.

NOTHING is more important in the affairs of housekeeping than the choice of wholesome food.

MACKEREL must be perfectly fresh. The firmness of the flesh and the clearness of the eyes must be the criterion of fresh mackerel, as they are of other fish.

FLOUNDERS, and all flat white fish, are rigid and firm when fresh; the under side should be of a rich cream colour.

COD is known to be fresh by the rigidity of the muscles (or flesh); the redness of the gills, and clearness of the eyes.

SALMON.—The flavour and excellence of this fish depend upon its freshness, and the shortness of time since it was caught.

HERRINGS can only be eaten when very fresh.

FRESH WATER FISH.—The remarks as to firmness and clear, fresh eyes, apply to this variety of fish, of which there are pike, perch, etc.

LOBSTERS recently caught have always some remains of muscular action in the claws, which may be excited by pressing the eyes with the finger; when this cannot be produced, the lobster must have been too long kept. When boiled, the tail preserves its elasticity if fresh, but loses it as soon as it becomes stale.

CRABS have an agreeable smell when fresh.

PRAWNS AND SHRIMPS, when fresh, are firm and crisp.

OYSTERS.—If fresh, the shell is firmly closed; when the shells of oysters are opened, they are dead and unfit for food. The small-shelled oysters are

the finest in flavour. Larger kinds are generally considered only fit for stewing and sauces, though some persons prefer them.

Beef.—The grain of ox beef, when good, is loose, the meat red, and the fat inclining to yellow. When meat pressed by the finger rises up quickly, it may be considered as that of an animal which was in its prime; when the dent made by pressure returns slowly, or remains visible, the animal had probably past its prime, and the meat consequently must be of inferior quality.

Veal should be delicately white, though it is often juicy and well flavoured, when rather dark in colour. On examining the loin, if the fat enveloping the kidney be white and firm looking, the meat will probably be prime, and recently killed.

Mutton.—The meat should be firm and close in grain, and red in colour the fat white and firm. Mutton is in its prime when the sheep is about five years old, though it is often killed much younger. If too young, the flesh feels tender when pinched, if too old on being pinched it wrinkles up and so remains. In young mutton, the fat readily separates; in old, it is held together by strings of skin.

Lamb.—This meat will not keep long after it is killed. The large vein in the neck is bluish in colour when the fore-quarter is fresh, green when becoming stale. In the hind-quarter, if not recently killed, the fat of the kidney will have a slight smell, and the knuckle will have lost its firmness.

Pork.—When good, the rind is thin, smooth, and cool to the touch; when changing, from being too long killed, it becomes flaccid and clammy.

Bacon should have a thin rind, and the fat should be firm and tinged with red by the curing; the flesh should be of a clear red, without intermixture of yellow, and it should firmly adhere to the bone. To judge the state of a ham, plunge a knife into it to the bone; on drawing it back, if particles of meat adhere to it, or if the smell is disagreeable, the curing has not been effectual, and the ham is not good; it should, in such a state be immediately cooked.

Venison.—When good, the fat is clear, bright, and of considerable thickness.

Turkeys.—In choosing poultry, the age of the bird is the chief point to be attended to. An old turkey has rough and reddish legs; a young one, smooth and black. Fresh killed, the eyes are full and clear, and the feet moist. When it has been kept too long, the parts about the vent begin to wear a greenish, discoloured appearance.

Common Domestic Fowls, when young, have the legs and comb smooth; when old, they are rough, and on the breast long hairs are found instead

of feathers. Fowls and chickens should be plump on the breast, fat on the back, and white legged.

GEESE.—The bills and feet are red when old, yellow when young. Fresh killed, the feet are pliable, stiff when too long kept. Geese are called green while they are only two or three months old.

DUCKS.—Choose them with supple feet and hard, plump breasts. Tame ducks have yellow feet, wild ones red.

PIGEONS are very indifferent food when they are too long kept. Suppleness of the feet shows them to be young; the state of the flesh is flaccid when they are getting bad from keeping. Tame pigeons are larger than the wild.

PARTRIDGES, when young, have yellow legs and dark-coloured bills. Old partridges are very indifferent eating.

WOODCOCK AND SNIPE, when old, have the feet thick and hard; when these are soft and tender, they are both young and fresh killed. When their bills become moist, and their throats muddy, they have been too long killed.

SEASONABLE FOOD.

There is an old maxim, "a place for everything and everything in its place." To which we beg to add another, "A season for everything, and everything in season."

JANUARY.

[Fish, poultry, etc., distinguished by *italics* are to be had in the highest perfection.]

FISH.—Cod, crabs, eels, flounders, herrings, lobsters, oysters, perch, pike, sturgeon, porgies.

MEAT.—Beef, house-lamb, mutton, pork, veal, and doe venison.

POULTRY AND GAME.—Capons, chickens, ducks, wild-ducks, fowls, geese, partridges, pheasants, pigeons (tame), pullets, *rabbits*, snipes, turkeys (hen), woodcock.

VEGETABLES.—Beets, sprouts, cabbage, cardoons, carrots, celery, onions, parsnips, potatoes, turnips.

FRUIT.—Almonds, apples.

FEBRUARY.

FISH.—Cod, crabs, flounders, herrings, oysters, perch, pike, sturgeon, porgies.

MEAT.—Beef, house-lamb, mutton, pork, veal.

POULTRY AND GAME.—Capons, chickens, ducklings, fowl (wild), green

geese, partridges, pheasants, pigeons (tame and wild), pullets, rabbits, snipes, turkeys, woodcock.

VEGETABLES.—Beets, cabbage, carrots, celery, mushrooms, onions, parsnips, potatoes, turnips.

FRUIT.—Apples, chestnuts, oranges.

MARCH.

FISH.—Eels, crabs, flounders, lobsters, mackerel, oysters, perch, pike, shrimp, smelt, sturgeon, porgies.

MEAT.—Beef, house-lamb, mutton, pork, veal.

POULTRY AND GAME.—Capons, chickens, ducklings, fowls, green geese, pigeons, rabbits, snipes, turkeys, woodcock.

VEGETABLES.—Beets, carrots, celery, cresses, onions, parsnips, potatoes, turnip tops.

FRUIT.—Apples, chestnuts, oranges.

APRIL.

FISH.—Shad, cod, *crabs*, eels, flounders, halibut, herrings, *lobsters*, mackerel, oysters, perch, pike, *salmon*, shrimps, smelts, sturgeon, trout, porgies.

MEAT.—Beef, house-lamb, mutton, pork, veal.

POULTRY AND GAME.—Chickens, ducklings, fowls, green geese, leverets, pigeons, pullets, rabbits, turkey-poults, wood-pigeons.

VEGETABLES.—Onions, parsnips, spinach, small salad, turnip tops, and rhubarb.

FRUIT.—Apples, nuts, oranges, pears.

MAY.

FISH.—*Shad*, cod, *crabs*, eels, flounders, halibut, herring, *lobsters*, mackerel, mullet, perch, pike, *salmon*, shrimps, smelts, sturgeon, trout, clams.

MEAT.—Beef, grass-lamb, house-lamb, mutton, pork, veal.

POULTRY AND GAME.—Chickens, fowls, green geese, pigeons, pullets, rabbits.

VEGETABLES.—Artichokes, green peas, asparagus, kidney-beans, cabbage, carrots, onions, peas, potatoes, radishes, rhubarb, salad, spinach, turnips.

FRUIT.—Apples, pears.

JUNE.

FISH.—Cod, shad, *crabs*, eels, flounders, herrings, *lobsters*, mackerel, perch, pike, *salmon*, clams, smelts, sturgeon, trout, cat-fish, black-fish.

MEAT.—Beef, *grass-lamb*, mutton, pork, veal.

Poultry and Game.—Chickens, ducklings, fowls, green geese, pigeons, pullets, rabbits.

Vegetables.—Asparagus, beans, white beet, cabbage, carrots, cucumbers, leeks, lettuce, onions, parsley, peas, potatoes, radishes, salad of all sorts, spinach, turnips.

Fruit.—Apples, apricots, cherries, currants, gooseberries, melons, pears, strawberries.

JULY.

Fish.—Cod, *crabs*, flounders, herrings, *lobsters*, *mackerel*, perch, pike, salmon, trout, *blue-fish*, *black-fish*, *bass*, *pickerel*, *cat fish*, eels, clams, porgies.

Meat.—Beef, *grass-lamb*, mutton, veal, buck venison.

Poultry and Game.—*Chickens*, ducks, fowls, *green geese*, leverets, pigeons, plovers, rabbits, *wild pigeons*.

Vegetables.—Artichokes, asparagus, balm, beans, carrots, cauliflowers, celery, cucumbers, herbs of all sorts, lettuce, mint, mushrooms, peas, potatoes, radishes, salads of all sorts, spinach, turnips, tomatoes, Carolina potatoes.

For Drying.—Mushrooms.

For Pickling.—French beans, red cabbage, cauliflowers, garlic, gherkins, onions.

Fruit.—Apples, apricots, cherries, currants, *damsons*, gooseberries, melons, nectarines, peaches, pears, oranges, pineapples, plums, raspberries, strawberries.

AUGUST.

Fish.—Cod, eels, crabs, flounders, herrings, lobsters, *mackerel*, *perch*, *pike*, *salmon*, *blue-fish*, *black fish*, *weak-fish*, *sheep's head*, *trout*, *porgies*, *clams*.

Meat.—Beef, grass-lamb, mutton, veal, buck-venison.

Poultry and Game.—Chickens, ducks, fowls, *green geese*, pigeons, plovers, rabbits, wild ducks, wild pigeons, red-bird, curlew.

Vegetables.—Artichokes, beans, white-beet, carrots, cauliflowers, cucumbers, pot-herbs of all sorts, leeks, lettuce, mushrooms, onions, peas, potatoes, radishes, salad of all sorts, spinach, turnips, tomatoes.

For Drying.—Basil, sage, thyme.

For Pickling.—Red cabbage, tomatoes, walnuts.

Fruit.—Apples (summer pippin), cherries, currants, damsons, gooseberries, grapes, melons, mulberries, nectarines, peaches, pears, plums (greengages), raspberries.

SEPTEMBER.

FISH.—Cockles, cod, crabs, eels, flounders, lobsters, *oysters*, *perch*, *pike*, shrimps, porgies, black-fish, weak-fish.

MEAT.—Beef, mutton, pork, veal, buck-venison.

POULTRY AND GAME.—Chickens, ducks, fowls, green geese, *partridges*, pigeons, plovers, rabbits, turkeys, *wild ducks*, wild pigeons, rabbits, quail.

VEGETABLES.—Artichokes, beans, cabbages, carrots, cauliflowers, celery, cucumbers, herbs of all sorts, leeks, lettuce, mushrooms, onions, parsnips, peas, potatoes, radishes, salad of all sorts, turnips, tomatoes, Carolina potatoes.

FRUIT.—Apples, damsons, grapes, hazel-nuts, medlars, peaches, pears, pine-apples, plums, quinces, strawberries, walnuts.

OCTOBER.

FISH.—Cockles, cod, crabs, eels, gudgeons, halibut, lobsters, mussels, oysters, perch, *pike*, salmon-trout, shrimps, smelts, porgies.

MEAT.—Beef, mutton, pork, veal, doe-venison.

POULTRY AND GAME.—Chickens, ducks, fowls, green geese, larks, partridges, *pheasants*, pigeons, red-bird, black-bird, robins, snipes, turkey, wild ducks, wild pigeons, wild rabbits, woodcock, teal.

VEGETABLES.—Artichokes, cabbages, cauliflowers, celery, herbs of all sorts, onions, parsnips, peas, potatoes, radishes, salad, spinach (winter), tomatoes, turnips, Carolina potatoes.

FRUIT.—Almonds, apples, black and white damsons, hazel-nuts, grapes, peaches, pears, quinces, walnuts.

NOVEMBER.

FISH.—Cockles, cod, crabs, eels, gudgeons, halibut, lobsters, mussels, oysters, perch, *pike*, salmon, shrimps, smelts, porgies, flounders.

MEAT.—Beef, house-lamb, mutton, pork, veal, doe-venison.

POULTRY AND GAME.—Chickens, ducks, fowls, *geese*, larks, partridges, pigeons, rabbits, *snipes*, turkey, wild ducks, *woodcock*, robins.

VEGETABLES.—Beets, cabbages, carrots, celery, herbs of all sorts, lettuce, onions, parsnips, potatoes, salad, spinach, tomatoes, turnips.

FRUIT.—Almonds, apples, chestnuts, hazel nuts, grapes, pears.

DECEMBER.

FISH.—*Cod*, crabs, eels, gudgeons, halibut, lobsters, oysters, perch, pike, salmon, shrimps, smelts, sturgeon.

A FASHIONABLE SUMMER RESORT.

MEAT.—Beef, house-lamb, mutton, pork, veal, doe-venison.

POULTRY AND GAME.—Capons, chickens, ducks, fowls, geese, guinea-fowl, hares, larks, partridges, pea-fowl, pheasants, pigeons, rabbits, snipes, turkey, wild ducks, woodcock.

VEGETABLES.—Beets, cabbages, carrots, celery, herbs of all sorts, lettuce, onions, parsnips, potatoes, salad, spinach, turnips.

FRUIT.—Apples, chestnuts, hazel-nuts.

NAMES AND SITUATIONS OF THE JOINTS.

The method of cutting up the carcases varies. That which we describe below is the most general.

BEAF—*Fore Quarter.*—Fore rib (five ribs); middle rib (four ribs); chuck (three ribs). Shoulder piece (top of fore leg); brisket (lower or belly part of the ribs); clod (fore shoulder blade); neck; shin (below the shoulder); cheek.

Hind Quarter.—Sirloin; rump; aitchbone—these are the three divisions of the upper part of the quarter; buttock and mouse-buttock, which divide the thigh; veiny piece, joining buttock; thick flank and thin flank (belly pieces) and leg. The sirloin and rump of both sides form a baron. *Beef is in season all the year; best in the winter.*

MUTTON.—Shoulder; breast (the belly); over which are the loin (chump or tail end). Loin (best end); and neck (best end); neck (scrag end). A chine is two necks; a saddle, two loins; then there are the leg and head. *Mutton is the best in winter, spring, and autumn.*

LAMB is cut into fore quarter and hind quarter; a saddle, or loin; neck, breast, leg, and shoulder. *Grass-lamb is in season from June to August.*

PORK is cut into leg, hand or shoulder; hind loin; fore loin; belly part; spare rib (or neck); and head. *Pork is in season nearly all the year.*

VEAL is cut into neck (scrag end); neck (best end); loin (best end); loin (chump, or tail end); fillet (upper part of the hind leg); hind knuckle (which joins the fillet knuckle of fore leg; blade (bone of shoulder); breast (best end); breast (brisket end); and hand. *Veal is always in season, but dear in the winter and spring.*

VENISON is cut into haunch (or back); neck, shoulder, and breast. *Doe-venison is best in January, October, November, and December, and buck-venison in June, July, August, and September.*

OX-TAIL is much esteemed for purposes of soup; so also is the CHEEK. The TONGUE is highly esteemed.

CALVES' HEADS are very useful for various dishes; so also their KNUCKLES, FEET, HEART, etc.

INSTRUCTIONS FOR COOKING.

COOKING.—Ten pounds of beef require from two hours to two hours and a half roasting, eighteen inches from a good fire.

Six pounds require one hour and a quarter to one hour and a half, fourteen inches from a good, clear fire.

Three ribs of beef, boned and rolled, tied round with paper, will require two hours and a half, eighteen inches from the fire, baste once only.

The first three ribs of fifteen or twenty pounds, will take three hours or three and a half; the fourth and fifth ribs will take as long, managed in the same way as the sirloin. Paper the fat and the thin part, or it will be done too much, before the thick part in done enough.

When beef is very fat, it does not require basting; if very lean, tie it up in greasy paper, and baste frequently and well.

Common cooks are generally fond of too fierce a fire, and of putting things too near to it,

Slow roasting is as advantageous to the tenderness and flavour of meat as slow boiling.

The warmer the weather, and the staler killed the meat is, the less time it will require to roast it.

Meat that is very fat requires more time than other meat.

In the hands of an expert cook, "alimentary substances are made almost entirely to change their nature, their form, consistence, odour, savour, colour, chemical composition, etc.; everything is so modified, that it is often impossible for the most exquisite sense of taste to recognise the substance which makes up the basis of certain dishes. The greatest utility of the kitchen consists in making the food agreeable to the senses, and rendering it easy of digestion."

BOILING extracts a portion of the juice of meat, which mixes with the water, and also dissolves some of its solids; the more fusible parts of the fat melt out, combine with the water, and form soup or broth. The meat loses its red colour, becomes more savoury in taste and smell, and more firm and digestible. If the process is continued *too long*, the meat becomes indigestible, less succulent, and tough.

To boil to perfection, it should be done slowly, in plenty of water, replaced by other hot water, as evaporation takes place; for, if boiled too quickly, the outside becomes tough; and not allowing the ready transmission of heat, the interior remains rare.

The loss by boiling varies from 6¼ to 16 per cent. The average loss on boiling butcher's meat, pork, hams, and bacon, is 12; and on domestic poultry, is 14¾.

The loss per cent. on boiling salt beef is 15; on legs of mutton, 10; hams, 12½; salt pork, 13⅓; knuckles of veal, 8⅓; bacon, 6¼; turkeys, 16; chickens, 13½.

The established rule as regards time, is to allow a quarter of an hour for each pound of meat if the boiling is rapid, and twenty minutes if slow. There are exceptions to this; for instauce, ham and pork, which require from twenty to twenty-five minutes per pound, and bacon nearly half an hour. For solid joints allow fifteen minutes for every pound, and from ten to twenty minutes over; though of course, the length of time will depend much on the strength of the fire, regularity in the boiling and size of the joint. The following table will be useful as an average of the time required to boil the various articles:

	H.	M.
A ham, 20 lbs. weight, requires	6	30
A tongue (if dry), after soaking	4	00
A tongue, out of pickle	2½ to 3	00
A neck of mutton	1	30
A chicken	0	20
A large fowl	0	45
A capon	0	35
A pigeon	0	15

The loss by roasting varies, according to Professor Donovan, from 14 3-5ths to nearly double that rate, per cent. The average loss on roasting butcher's meat is 22 per cent.; and on domestic poultry is 20½.

The loss per cent. on roasting beef, viz., on sirloins and ribs together, is 19 1-6th; on mutton, viz., legs and shoulders together, 24 4-5ths; on fore quarters of lamb, 22⅓; on ducks, 27 1-5th; on turkeys, 20½; on geese, 19½; on chickens, 14 3-5ths.

Broiling requires a brisk, rapid heat, which, by producing a greater degree of change in the affinities of the raw meat than roasting, generates a higher flavour, so that broiled meat is more savoury than roast. The surface becoming charred, a dark-coloured crust is formed, which retards the evaporation of the juices; and therefore if properly done, broiled may be as tender and juicy as roasted meat.

Baking does not admit of the evaporation of the vapours so rapidly as by the processes of broiling and roasting; the fat is also retained more,

and becomes converted by the agency of the heat into an empyreumatic oil, so as to render the meat less fitted for delicate stomachs, and more difficult to digest. The meat is in fact, partly boiled in its own confined water, and partly roasted by the dry hot air of the oven.

The loss by baking has not been estimated; and as the time required to cook many articles must vary with their size, nature, etc., we have considered it better to leave that until giving the receipts for them.

FRYING is of all methods the most objectionable, from the foods being less digestible when thus prepared, as the fat employed undergoes chemical changes. Olive oil in this respect is preferable to lard or butter.

ROAST BEEF.—The tender-loin and first and second cuts off the rack are the best roasting pieces—the third and fourth cuts are good. When the meat is put to the fire, a little salt should be sprinkled on it, and the bony side turned toward the fire first. When the bones get well heated through, turn the meat, and keep a brisk fire—baste it frequently while roasting. There should be a little water put into the dripping pan when the meat is put down to roast. If it is a thick piece, allow fifteen minutes to each pound to roast it in—if thin less time will be required.

BEEF STEAK.—The tender-loin is the best piece for broiling—a steak from the round or shoulder clod is good and comes cheaper. If the beef is not very tender, it should be laid on a board and pounded, before broiling or frying it. Wash it in cold water, then lay it on a gridiron, place it on a hot bed of coals, and broil it as quick as possible without burning it. If broiled slow it will not be good. It takes from fifteen to twenty minutes to broil a steak. For seven or eight pounds of beef, cut up a quarter of a pound of butter. Heat the platter very hot that the steak is to be put on, lay the butter on it, take up the steak, salt and pepper it on both sides. Beef steak to be good should be eaten as soon as cooked. A few slices of salt pork broiled with the steak makes a rich gravy with a very little butter. There should always be a trough to catch the juices of the meat when broiled. The same pieces that are good broiled are good for frying. Fry a few slices of salt pork brown, then take them up and put in the beef. When brown on both sides, take it up, take the pan off from the fire, to let the fat cool; when cool, turn in half a teacup of water, mix a couple of teaspoonfuls of flour with a little water, stir it into the fat, put the pan back on the fire; stir it till it boils up, then turn it over the beef.

ALAMODE BEEF.—The round of beef is the best piece to alamode—the shoulder clod is good, and comes lower; it is also good stewed, without any spices. For five pounds of beef, soak about a pound of bread in cold

water till soft, then drain off the water, mash the bread fine, put in a piece of butter, of the size of a hen's egg, half a teaspoonful of salt, the same quantity of ground cloves, allspice, and pepper, half a nutmeg, a couple of eggs, and a tablespoonful of flour—mix the whole well together; then cut gashes in the beef, and fill them with about half of the dressing, put the meat in a bakepan, with lukewarm water enough to cover it; set it where it will stew gently for a couple of hours; cover it with a heated bake-pan lid. When it has stewed a couple of hours, turn the reserved dressing on top of the meat, heat the bake-pan lid hot enough to brown the dressing, stew it an hour and a half longer. After the meat is taken up, if the gravy is not thick enough, mix a teaspoonful or two of flour with a little water, and stir it into the gravy; put in a little butter, a wineglass of wine, and turn it over the meat.

Beef Liver.—Liver is very good fried, but the best way to cook it, is to broil it ten minutes with four or five slices of salt pork. Then take it out, cut it into small strips together with the pork, put it in a stew-pan, with a little water, butter and pepper. Stew it four or five minutes.

To Corn Beef.—To every gallon of cold water, put a quart of rock salt, an ounce of saltpetre, quarter of a pound of brown sugar (some people use molasses, but it is not as good); no boiling is necessary. Put the beef in the brine. As long as any salt remains at the bottom of the cask it is strong enough. Whenever any scum rises, the brine should be scalded, skimmed, and more sugar, salt and saltpetre added. When a piece of beef is put in the brine, rub a little salt over it. If the weather is hot, cut a gash to the bone of the meat, and fill it with salt. Put a heavy weight on the beef in order to keep it under the brine. In very hot weather, it is difficult to corn beef in cold brine before it spoils. On this account it is good to corn it in the pot when boiled. It is done in the following manner; to six or eight pounds of beef, put a teacup of salt; sprinkle flour on the side that is to go up on the table, and put it down in the pot, turn the water into the pot after the beef is put in, boil it a couple of hours, then turn in more cold water, and boil it an hour and a half longer.

Mutton.—The saddle is the best part to roast—the shoulder and leg are good roasted; but the best mode to cook the latter is to boil it with a piece of salt pork. A little rice boiled with it improves the look of it. Mutton for roasting should have a little butter rubbed on it, and a little salt and pepper sprinkled on it—some people like cloves and allspice. Put a small piece of butter in the dripping-pan, and baste it frequently. The bony side should be turned towards the fire first, and roasted. For boiling or roasting mutton allow a quarter of an hour to each pound of

meat. The leg is good cut in gashes, and filled with a dressing, and baked. The dressing is made of soaked bread, a little butter, salt, and pepper, and a couple of eggs. A pint of water with a little butter should be put in a pan. The leg is also good, cut into slices and broiled. It is good corned a few days, and then boiled. The rack is good for broiling—it should be divided, each bone by itself, broiled quick, and buttered, salted and peppered. The breast of mutton is nice baked. The joints off the brisket should be separated, the sharp ends of the ribs sawed off, the outside rubbed over with a little piece of butter—salt it, and put it in a bake-pan, with a pint of water. When done, take it up, and thicken the gravy with a little flour and water, and put in a small piece of butter. A tablespoonful of ketchup, cloves and allspice, improve it, but are not essential. The neck of mutton makes a good soup. Parsley or celery-heads are a pretty garnish for mutton.

VEAL.—The loin of veal is the best piece for roasting. The breast and rack are good roasted. The breast is also good made into a pot-pie, and the rack cut into small pieces and broiled. The leg is nice for frying, and when several slices have been cut off for cutlets, the remainder is nice boiled with a small piece of salt pork. Veal for roasting should be salted, peppered, and a little butter rubbed on it, and basted frequently. Put a little water in the dripping-pan, and unless the meat is quite fat, a little butter should be put in. The fillet is good baked, the bone should be cut out, and the place filled with a dressing, made of bread soaked soft in cold water, a little salt, pepper, a couple of eggs, and a tablespoonful of melted butter put in—then sew it up, put it in your bake-pan, with about a pint of water, cover the top of the meat with some of the dressing. When baked sufficiently, take it up, thicken the gravy with a little flour and water well mixed, put in a small piece of butter and a little wine and ketchup, if you like the gravy rich.

VEAL CUTLETS.—Fry three or four slices of pork until brown—take them up, then put in slices of veal, about an inch thick, cut from the leg. When brown on both sides, take them up; stir half a pint of water into the gravy, then mix two or three teaspoonfuls of flour with a little water, and stir it in; soak a couple of slices of toasted bread in the gravy, lay them on the bottom of the platter, place the meat and pork over it, then turn on the gravy. A very nice way to cook the cutlets, is to make a batter with half a pint of milk, an egg beaten to a froth, and flour enough to render it thick. When the veal is fried brown, dip it into the batter, then put it back into the fat, and fry it until brown again. If you have any batter left, it is nice dropped by the large spoonful into the fat, and

fried till brown, then laid over the veal. Thicken the gravy and turn it over the whole. It takes about an hour to cook this dish. If the meat is tough, it will be better to stew it half an hour before frying it.

CALF'S HEAD.—Boil the head two hours, together with the lights and feet. Put in the liver when it has boiled an hour and twenty minutes. Before the head is done, tie the brains in a bag, and boil them with it; when the brains are done, take them up, season them with salt, pepper, butter, and sweet herbs, or spices if you like—use this as a dressing for the head. Some people prefer part of the liver and feet for dressing; they are prepared like the brains. The liquor that the calf's head is boiled in, makes a good soup, seasoned in a plain way like any other veal soup, or seasoned turtle fashion. The liquor should stand until the next day after the head is boiled, in order to have the fat rise, and skimmed off. If you wish to have your calf's head look brown, take it up when tender, rub a little butter over it, sprinkle on salt, pepper, and allspice—sprinkle flour over it, and put before the fire, with a Dutch oven over it, or in a brick oven where it will brown quick. Warm up the brains with a little water, butter, salt, and pepper. Add wine and spices if you like. Serve it up as a dressing for the head. Calf's head is also good baked. Halve it, rub butter over it, put it in a pan, with about a quart of water; then cover it with a dressing made of bread soaked soft, a little butter, an egg, and season it with salt, pepper, and powdered mace. Slice up the brains, and lay them in the pan with the head. Bake it in a quick oven, and garnish it with slices of lemon, or force meat-balls.

FORCE-MEAT BALLS.—Chop a pound or two of veal fine; mix it with one or two eggs, a little butter, or raw pork chopped fine; season it with salt and pepper, or curry powder. Do it up into balls about the size of half an egg, and fry them brown.

CALF'S FEET.—Boil them with the head, until tender, then split and lay them round the head, or dredge them with flour after they have been boiled tender, and fry them brown. If you wish for gravy for them, when you have taken them up, stir a little flour into the fat they were fried in; season it with salt, pepper, and mace. Add a little butter and wine if you like, then turn it over the feet.

CALF'S LIVER AND HEART—Are good broiled or fried. Some people like the liver stuffed and baked.

A FILLET OF VEAL.—Cut off the shank of a leg of veal, and cut gashes in the remainder. Make a dressing of bread, soaked soft in cold water, and mashed; season it with salt, pepper, and sweet herbs; chop a little raw pork fine, put it in the dressing, and if you have not pork, use a little but-

ter instead. Fill the gashes in the meat with part of the dressing, put it in the bake-pan, with just water enough to cover it; put the remainder of the dressing on top of the meat, and cover it with a heated bake-pan lid. For six pounds of veal, allow two hours steady baking. A leg of veal is nice prepared in this manner, and roasted.

LAMB.—The fore and hind quarters are good roasting pieces. Sprinkle salt and pepper on the lamb, turn the bony side toward the fire first; if not fat, rub a little butter on it, and put a little in the dripping-pan; baste it frequently. These pieces are good stuffed like a fillet of veal, and roasted. The leg is also good, cooked in the same manner; but it is better boiled with a pound of salt pork. Allow fifteen minutes boiling to each pound of meat. The breast of lamb is good roasted, broiled, or corned and boiled; it is also good made into a pot-pie. The fore quarter, with the ribs divided, is good broiled. The bones of this, as well as all kinds of meat, when put down to broil, should first be put towards the fire, and browned before the other side is broiled. A little salt, pepper, and butter, should be put on it when you take it up. Lamb is very apt to spoil in warm weather. If you wish to keep a leg several days, put it in brine. It should not be put with pork, as fresh meat is apt to injure it. Lamb's head, feet, and heart, are good, boiled till tender, then cut off the flesh from the head, cut up the heart, and split the feet in two; put the whole into a pan, with a pint of liquor they were boiled in, together with a little butter, pepper, salt, and half a teacup of tomato ketchup; thicken the gravy with a little flour; stew the whole for a few moments. Pepper-grass or parsley is a pretty garnish for this dish.

LAMB'S FRY.—The heart and sweetbread are nice fried plainly, or dipped into a beaten egg and fine bread crumbs. They should be fried in lard.

TURKEY.—Take out the inwards, wash both the inside and outside of the turkey. Prepare a dressing made of bread soaked soft in cold water (the water should be drained from the bread, and the bread mashed fine). Melt a small piece of butter, and mix it with the dressing, or else put in salt pork chopped fine; season it with salt and pepper; add sweet herbs if you like. An egg in the dressing makes it cut smoother. Any kind of cooked meat is nice minced fine, and mixed with the dressing. If the inwards are used, they ought to be boiled very tender, as it is very difficult to cook them through while the turkey is roasting. Fill the crop and body of the turkey with the dressing, sew it up, tie up the legs and wings, rub on a little salt and butter. Roast it from two to three hours, according to its size; twenty-five minutes to every pound is a good rule. The

turkey should be roasted slowly at first, and basted frequently. A little water should be put into the dripping-pan, when the meat is put down to roast. For a gravy to the turkey, take the liquor that the inwards are boiled in, put into it a little of the turkey drippings, set it where it will boil, thicken it with a little flour and water previously mixed smooth. Season it with salt, pepper, and sweet herbs if you like. Drawn butter is used for boiled turkey. A turkey for boiling should be prepared in the same manner as one for roasting. If you wish to have it look white, tie it up in a cloth, unless you boil rice in the pot. If rice is used, put in two-thirds of a teacup. A pound or two of salt pork boiled with the turkey, improves it. If you wish to make a soup of the liquor in which the turkey is boiled, let it remain until the next day, then skim off the fat. Heat and season it.

Goose.—If a goose is tender under the wing, and you can break the skin easily by running the head of a pin across the breast, there is no danger of it being tough. A goose should be dressed in the same manner, and roasted the same length of time as a turkey.

Chickens.—Chickens for roasting or boiling should have a dressing prepared like that for turkeys. Half a teacup of rice boiled with the chickens makes them look white. They will be less liable to break if the water is cold when they are put in. A little salt pork boiled with the chickens improves them. If you do not boil pork with them you will need salt. Chickens for broiling should be split, the inwards taken out, and the chicken washed inside and out. Put the bony side down on the gridiron, and broil it very slowly until brown, then turn it, and brown it on the other side. About forty minutes is required to broil a common-sized chicken. For roast chicken, boil the liver and gizzards by themselves, and use the water for gravy to the chickens; cut the inwards in slices, and put them in the gravy.

Fricassee.—The chickens should be jointed, the inwards taken out, and the chickens washed. Put them in a stew-pan with the skin side down; on each layer sprinkle salt and pepper; put in three or four slices of pork, just cover them with water, and let them stew till tender. Then take them up, mix a little flour and water together, and thicken the liquor they were stewed in, add a piece of butter of the size of a hen's egg, then put the chickens back in the stew-pan, and let them stew four or five minutes longer. When you have taken up the chickens, soak two or three slices of toast in the gravy, then put them in your platter, lay the chickens over the toast, and turn the gravy on them. If you wish to brown the chickens, stew them without the pork till tender, then fry the

pork brown, take it up, put in the chickens, and then fry until a light brown.

PIGEONS.—Take out the inwards, and stuff the pigeons with a dressing prepared like that for turkeys, lay them in a pot with the breast side down. Turn in more than enough water to cover them. When stewed nearly tender, put in a quarter of a pound of butter to every dozen of pigeons—mix two or three teaspoonsful of flour with a little water, and stir into the gravy. If you wish to brown them, put on a heated bake-pan lid, an hour before they are done, or else take them up when tender, and fry them in pork fat. They are very good split open and stewed, with a dressing made and warmed up separately with a little of the gravy. Tender pigeons are good stuffed and roasted. It takes about two hours to cook tender pigeons, and three hours tough ones. Roast pigeons should be buttered when put to the fire.

DUCKS—Are good stewed like pigeons, or roasted. Two or three onions in the dressing of wild ducks takes out the fishy taste they are apt to have. If ducks or any other fowls are slightly injured by being kept long, dip them in weak salaratus water before cooking them.

BAKED OR ROAST PIG.—A pig for roasting or baking should be small and fat. Take out the inwards, and cut off the first joint of the feet, and then boil them till tender, then chop them. Prepare a dressing of bread soaked soft, the water squeezed out and the bread mashed fine; season it with salt, pepper, and sweet herbs, add a little butter, and fill the pig with the dressing. Rub a little butter on the outside of the pig, to prevent its blistering. Bake or roast it from two hours and a half to three hours. The pan that the pig is baked in should have a little water put in it. When cooked, take out a little of the dressing and gravy from the pan, mix it with the chopped inwards and feet, put in a little butter, pepper, and salt, and use this for a sauce to the pig. Expose the pig to the open air two or three minutes before it is put on the table, to make it crispy.

SWEETBREAD, LIVER, AND HEART.—A very good way to cook the sweetbread, is to fry three or four slices of pork till brown, then take them up and put in the sweetbread, and fry it over a moderate fire. When you have taken up the sweetbread, mix a couple of teaspoonsful of flour with a little water, and stir it into the fat—let it boil, then turn it over the sweetbread. Another way is to parboil them, and let them get cold, then cut them in pieces about an inch thick, dip them in the yolk of an egg and fine bread crumbs, sprinkle salt, pepper, and sage on them before dipping them in the egg; fry them a light brown. Make a gravy after you have taken them up, by stirring a little flour and water mixed smooth in the

fat, and spices and wine if you like. The liver and heart are good cooked in the same manner, or broiled.

TRIPE—After being scoured, should be soaked in salt and water seven or eight days, changing the water every other day, then boil it till tender, which will take eight or ten hours. It is then fit for broiling, frying, or pickling. It is pickled in the same manner as souse.

SAUSAGES.—Chop fresh pork very fine, the lean and fat together (there should be rather more of the lean than the fat), season it highly with salt, pepper, sage, and other sweet herbs, if you like them—a little saltpetre tends to preserve them. To tell whether they are seasoned enough, do up a little into a cake, and fry it. If not seasoned enough, add more seasoning, and fill your skins, which should be previously cleaned thoroughly. A little flour mixed in with the meat tends to prevent the fat from running out when cooked. Sausage-meat is good done up in small cakes and fried. In summer, when fresh pork cannot be procured, very good sausage-cakes may be made of raw beef, chopped fine with salt pork, and seasoned with pepper and sage. When sausages are fried, they should not be pricked, and they will cook nicer to have a little fat put in the frying-pan with them. They should be cooked slowly. If you do not like them very fat, take them out of the pan when nearly done, and finish cooking them on a gridiron. Bologna sausages are made of equal weight each of ham, veal, and pork, chopped very fine, seasoned high, and boiled in casings till tender, then dried.

HAM.—A ham that weighs ten pounds should be boiled four or five hours; if very salt, the water should be changed. Before it is put on the table take off the rind. If you wish to ornament it, put whole cloves, or pepper, in the form of diamonds, over it. The Virginia method of curing hams (which is considered very superior), is to dissolve two ounces of saltpetre, two teaspoonsful of saleratus, in a salt pickle, as strong as possible, for every sixteen pounds of ham. Add molasses in the proportion of a gallon to a hogshead of brine, then put in the hams and let them remain three or four weeks. Then take them out of the brine, and smoke them with the hocks downward, to preserve the juices. They will smoke tolerably well in the course of a month, but they will be much better to remain in the smoke-house two or three months. Hams cured in this manner are very fine flavoured, and will keep good a long time.

TONGUES.—Cut off the roots of the tongues; they are not good smoked, but they make nice pies. Take out the pipes and veins, boil them till tender, mince them fine, season the meat with salt, cloves, mace, and cinnamon, put in a little sugar and molasses, moisten the whole with brandy,

put in a cool place, and it will keep good several months in cold weather, and it is good to make pies of at any time, with the addition of apples chopped fine, and a little butter melted. For the remainder of the tongues, make a brine in the following manner—to a gallon of cold water put a quart of rock salt, an ounce of saltpetre, quarter of a pound of sugar, and couple of teaspoonfuls of blown salt. Put in the tongues, let them remain in it a week, and then smoke them eight or ten days.

CHICKEN PIE.—Joint the chickens, which should be young and tender. Boil them in just sufficient water to cover them. When nearly tender take them out of the liquor, and lay them in a deep pudding-dish, lined with pie-crust. To each layer of chicken, put three or four slices of pork, add a little of the liquor in which they were boiled, and a couple of ounces of butter cut into small pieces—sprinkle a little flour over the whole, cover it with nice pie crust, and ornament the top with some of your pastry. Bake it in a quick oven one hour.

BEEF AND MUTTON PIE,—Take tender meat, pound it out thin, and broil it ten minutes—then cut off the bony and gristly parts, season it highly with salt and pepper, butter it, and cut it into small pieces. Line a pudding dish with pastry, put in the meat, and to each layer add a teaspoonful of tomato ketchup, together with a tablespoonful of water—sprinkle over flour, and cover it with pie crust, and ornament as you please with pastry. Cold roast or boiled beef and mutton make a good pie, by cutting them into bits, and seasoning them highly with salt and pepper. Put them into a pie dish, turn a little melted butter over them, or gravy, and pour in water till you can just see it at the top.

CHICKEN AND VEAL POT PIE.—If the pie is to be made of chickens, joint them—boil the meat until about half done. Take the meat out of the liquor in which it was boiled, and put it in a pot, with a layer of crust to each layer of meat, having a layer of crust on the top. The meat should be seasoned with salt and pepper—cover the whole with the boiled meat liquor. If you wish to have the crust brown, keep the pot covered with a heated bake pan lid. Keep a tea kettle of boiling water to turn in as the water boils away—cold water makes the crust heavy. The crust for the pie is good like that made for fruit pies, with less shortening, but raised pie crust is generally preferred to any other. It is made in the following manner—mix together three pints of flour, a teacupful of melted butter, a teaspoonful of salt, then turn in half a teacupful of yeast—add cold water to make it sufficiently stiff to roll out. Set it in a warm place to rise, which will take seven or eight hours, unless brewers' yeast is used. When risen, roll it out and cut it into small cakes. Potato pie crust is

very nice. To make it, boil eight or nine small potatoes, peel and mash them fine, mix with them a piece of butter, of the size of a hen's egg, a teaspoonful of salt, a tumblerful of milk and flour to render it of the right consistency to roll out. When rolled out, cut them into cakes, and put them with the meat. If you happen to have unbaked wheat dough, very good crust may be made of it, by working into it a little lukewarm melted butter. Let it remain, after you have rolled and cut it into cakes, about ten or fifteen minutes, before putting it with the meat.

WARMED-OVER MEATS.—Boiled or roasted veal makes a nice dish, chopped fine, and warmed up, with just sufficient water to moisten it, and a little butter, salt, and pepper added. A little nutmeg and the grated rind of a lemon improve it—none of the white part of the lemon should be used. When well heated through, take it up on a platter, and garnish it with a couple of lemons cut in slices. Fresh or corned beef is good minced fine, with boiled potatoes, and warmed up with salt, pepper, and a little water—add butter, just before you take it up. Some people use the gravy that they have left the day before, for the meat, but it is not as good when warmed over, and there is no need of its being wasted, as it can be clarified, and used for other purposes. Boiled onions, or turnips, are good mixed with mince-meat, instead of potatoes. Veal, lamb, and mutton are good cut into small strips, and warmed with boiled potatoes cut in slices, pepper, salt, a little water—add butter just before you take it up. Roast beef and mutton, if not previously cooked too much, are nice cut in slices, and just scorched on a gridiron. Meat, when warmed over, should be on the fire just long enough to get well heated through—if on the fire long, most of the juices of the meat will be extracted, and render it very indigestible. Cold fowls are nice jointed, and warmed with a little water, then taken up and fried in butter till brown. A little flour should be sprinkled on them before frying. Thicken the water that the fowls were warmed in—add a little salt, pepper, and butter, and turn it over the fowls.

DRAWN BUTTER—Mix two or three teaspoonsful of flour with a little cold water—stir it till free from lumps, thin it, and stir it into half a pint of boiling water—let it boil two or three minutes, then cut up about a quarter of a pound of butter into small pieces, and put it with the flour and water—set it where it will melt gradually. If carefully mixed, it will be free from lumps—if not, strain it before it is put on the table. If the butter is to be eaten on fish, cut up several soft boiled eggs into it. A little curry powder sprinkled into it, will convert it into curry sauce.

Burnt Butter.—Put a couple of ounces of butter into a frying pan—set it on a fire—when of a dark brown colour, put in half a teacupful of vinegar, a little pepper and salt. This is nice for fish, salad, or eggs.

Roast Meat Gravy.—Meat, when put down to roast, should have about a pint of water in the dripping-pan. A little while before the meat is done, stir up the drippings, put it in a skillet, and set it where it will boil. Mix two or three teaspoonfuls of flour smoothly with a little water, and stir it in the gravy when it boils. Lamb and veil require a little butter in the gravy. The gravy for pork and geese should have a little of the dressing and sage mixed with it. If you wish to have your gravies look dark, scorch the flour that you thicken them with, which is easily done by putting it in a pan, setting it on a few coals, and stirring it constantly till it is a dark brown colour, taking care that it does not burn. Enough can be burnt at once to last a long time.

Sauce for Cold Meat, Fish, or Salad.—Boil a couple of eggs three minutes; then mix it with a mustard-spoonful of made mustard, a little salt, pepper, half a tea-cup of salad oil or melted butter, and half a tea-cup of vinegar. A table-spoonful of ketchup improves it.

Wine Sauce for Venison or Mutton.—Warm half a pint of the drippings or liquor the meat was boiled in; mix a couple of teaspoonsful of scorched flour with a little water, and stir it in when the gravy boils. Season it with salt, pepper, and cloves; stir a tablespoonful of currant jelly in, and, just before you take it from the fire, half a tumbler of wine. Many people prefer melted currant jelly to any other sauce for venison or mutton.

Oyster Sauce.—Take the juice of the oysters, and to a pint put a couple of sticks of mace, a little salt and pepper. Set it on the fire; when it boils, stir in a couple of teaspoonsful of flour, mixed with milk. When it has boiled several minutes, stir in half a pint of oysters, a piece of butter of the size of a hen's egg. Let them scald through, then take them up.

White Celery Sauce for Boiled Poultry.—Take five or six heads of celery, cut off the green tops, cut up the remainder into small bits, and boil it tender in half a pint of water; mix two or three teaspoonfuls of flour smoothly with a little milk; then add half a teacup more of milk, stir it in, add a small lump of butter and a little salt. When it boils take it up.

Brown Sauce for Poultry.—Peel two or three onions, cut them in slices, flour and fry them brown in a little butter; then sprinkle in a little flour, pepper, salt, and sage; add half a pint of the liquor the poultry was

boiled in, and a tablespoonful of ketchup. Let it boil; then stir in half a wineglass of wine if you like.

Savoury Jelly for Cold Meat.—Boil lean beef or veal till tender. If you have any beef or veal bones, crack and boil them with the meat (they should be boiled longer than the meat,) together with a little salt pork, sweet herbs, and pepper and salt. When boiled sufficiently, take it off, strain it, and let remain till the next day; then skim off the fat, take up the jelly, and scrape off the dregs that adhere to the bottom of it; put in the whites and shells of several eggs, several blades of mace, a little wine and lemon juice; set it on the fire, stir it well till it boils, then strain it till clear through a jelly bag.

Chicken Salad.—Boil a chicken that weighs not more than a pound and a half. When very tender take it up, cut it in small strips, and make the following sauce, and turn over it: Boil four eggs three minutes; then take them out of the shells, mash and mix them with a couple of tablespoonsful of olive oil or melted butter, two-thirds of a tumbler of vinegar, a teaspoonful of mixed mustard, a teaspoonful of salt, a little pepper, and essence of celery if you have it—if not, it can be dispensed with.

Apple and Cranberry Sauce.—Pare and quarter the apples—if not tart, stew them in cider—if tart enough, stew them in water. When stewed soft, put in a small piece of butter, and sweeten it to the taste with sugar. Another way, which is very good, is to boil the apples, without paring them, with a few quinces and molasses, in new cider, till reduced to half the quantity. When cool, strain the sauce. This kind of sauce will keep good several months. It makes very good plain pies, with the addition of a little cinnamon or cloves. To make cranberry sauce nothing more is necessary than to stew the cranberries till soft, then stir in sugar and molasses to sweeten it. Let the sugar scald in it a few minutes. Strain if you like—it is very good without straining.

Pudding Sauce.—Stir to a cream a teacup of butter, with two of brown sugar, then add a wineglass of wine or cider; flavour it with nutmeg, rose-water, or essence of lemon. If you wish to have it liquid, heat two-thirds of a pint of water, boiling hot, mix two or three teaspoonsful of flour with a little water and stir it into the boiling water. As soon as it boils up well, stir it into the butter and sugar.

Mushroom Ketchup.—Put a layer of fresh mushrooms in a deep dish, sprinkle a little salt over them, then put in another layer of fresh mushrooms and salt, and so on till you get in all the mushrooms. Let them remain several days; then mash them fine, and to each quart put a tablespoonful of vinegar, half a teaspoonful of black pepper, and a quarter of a

teaspoonful of cloves; turn it into a stone jar, set the jar in a pot of boiling water and let it boil two hours, then strain it without squeezing the mushrooms. Boil the juice a quarter of an hour, skim it well, let it stand a few hours to settle, then strain it off carefully through a sieve, bottle and cork it tight. Keep it in a cool place.

Walnut Ketchup.—Procure the walnuts by the last of June; keep them in salt and water for a week, then bruise them, and turn boiling vinegar on them. Let them remain covered with vinegar for several days, stirring up each day; then boil them a quarter of an hour with a little more vinegar, strain them through a thick cloth, so that none of the course particles of the walnuts will go through; season the vinegar highly with cloves, allspice, pepper and salt. Boil the whole a few minutes, then bottle and cork it tight. Keep it in a cool place.

Plain Veal Soup.—A leg of veil, after enough has been cut off for cutlets, makes a soup nearly as good as calf's head. Boil it with a cup two-thirds full of rice, and a pound and a half of pork; season it with salt, pepper, and sweet herbs, if you like. A little celery boiled in it gives the soup a fine flavour. Some people like onions, carrots, and parsley boiled in it. If you wish for balls in the soup, chop veal and a little raw salt pork fine; mix it with a few bread crumbs and a couple of eggs. Season it with salt and pepper; add a little curry powder if you like—do it up into small balls and boil them in the soup. The veal should be taken up before the soup is seasoned. Just before the soup is taken up, put in a couple of slices of toast, cut into small pieces. If you do not like your soup fat, let the liquor remain till the day after you have boiled the meat, and skim off the fat before heating the liquor. The shoulder of veal makes a good soup.

Mock Turtle, or Calf's Head Soup.—Boil the head until perfectly tender, then take it out, strain the liquor, and set it away until the next day, then skim off the fat, cut up the meat, together with the lights, and put it into the liquor, put it on the fire, and season it with salt, pepper, cloves, and mace, add onions and sweet herbs if you like: stew it gently for half an hour. Just before you take it up, add half a pint of white wine. For the balls chop lean veal fine, with a little salt pork, add the brains, and season it with salt, pepper, cloves, mace, sweet herbs or curry powder, make it up into balls about the size of half an egg, boil part in the soup, and fry the remainder, and put them in a dish by themselves.

Beef or Black Soup.—The shank of beef is the best part for soup—cold roast beef bones and beef steak make very good soup. Boil the shank four or five hours in water enough to cover it. Half an hour before the

soup is put on the table, take up the meat, thicken the soup with scorched flour mixed with cold water, season it with salt, pepper, cloves, mace, a little walnut or tomato ketchup improves it, put in sweet herbs or herb spirit if you like. Some cooks boil onions in the soup, but as they are very disagreeable to many persons, it is better to boil and serve them up in a dish by themselves. Make force meat balls of part of the beef and pork, season them with mace, cloves, pepper and salt, and boil them in the soup fifteen minutes.

Chicken or Turkey Soup.—The liquor that a turkey or chicken is boiled in makes a good soup. If you do not like your soup fat, let the liquor remain till the day after the poultry has been boiled in it, then skim off the fat, set it where it will boil. If there was not any rice boiled with the meat, put in half a teacupful when the liquor boils, or slice up a few potatoes and put in—season it with salt and pepper, and sweet herbs, a little celery boiled in it improves it. Toast bread or crackers, and put them in the soup when you take it up.

Oyster Soup.—Separate the oysters from the liquor, to each quart of the liquor put a pint of milk or water, set it on the fire with the oysters. Mix a heaping tablespoonful of flour with a little water, and stir it into the liquor as soon as it boils. Season it with salt, pepper, and a little walnut or butternut vinegar, if you have it, if not, common vinegar may be substituted. Put in a small lump of butter, and turn it as soon as it boils up again on to buttered toast cut into small pieces.

Pea Soup.—If you make your soup of dry peas, soak them over night, in a warm place, using a quart of water to each quart of the peas. Early the next morning boil them an hour. Boil with them a teaspoonful of saleratus eight or ten minutes, then take them out of the water they were soaking in, put them into fresh water, with a pound of salt pork, and boil it till the peas are soft, which will be in the course of three or four hours. Green peas for soup require no soaking, and boiling only long enough to have the pork get thoroughly cooked, which will be in the course of an hour.

Omelet.—Beat the eggs to a froth, and to a dozen of eggs put three ounces of finely minced boiled ham, beef, or veal; if the latter meat is used add a little salt. Melt a quarter of a pound of butter, mix a little of it with the eggs—it should be just lukewarm. Set the remainder of the butter on the fire, in a frying or tin pan, when quite hot, turn in the eggs beaten to a froth, stir them until they begin to set. When brown on the under side, it is sufficiently cooked. The omelet should be cooked on a moderate fire, and in a pan small enough to have the omelet an inch thick,

When you take them up, lay a flat dish on them, then turn the pan upside down.

POACHED EGGS.—Break the eggs into a pan, beat them to a froth, then put them into a buttered tin pan, set the pan on a few coals, put in a small lump of butter, a little salt, let them cook very slowly, stirring them constantly till they become quite thick, then turn them on to buttered toast.

BROILING, BOILING AND FRYING FISH.—Fish for boiling or broiling are the best the day after they are caught. They should be cleaned when first caught, washed in cold water, and half a teacup of salt sprinkled on the inside of them. If they are to be broiled, sprinkle pepper on the inside of them—keep them in a cool place. When fish is broiled, the bars of the gridiron should be rubbed over with a little butter, and the inside of the fish put toward the fire, and not turned till the fish is nearly cooked through, then butter the skin side and turn it over; fish should be broiled slowly. When fresh fish is to be boiled, it should either be laid on a fish strainer, or sewed up in a cloth, if not, it is very difficult to take it out of the pot without breaking. Put the fish into cold water with the back bone down. To eight or ten pounds of fish, put half of a small teacup of salt. Boil the fish until you can draw out one of the fins easily—most kinds of fish will boil sufficiently in the course of twenty or thirty minutes; some kinds will boil in less time. Some cooks do not put their fish into water till it boils, but it is not a good plan, as the outside gets cooked too much, and breaks to pieces before the inside is sufficiently done. Fish for frying, after being cleaned and washed, should be put into a cloth to have it absorb the moisture. They should be dried perfectly and a little flour rubbed over them. No salt should be put on them, if you wish to have them brown well. For five or six pounds of fish, fry three or four slices of salt pork; when brown, take them up and if they do not make fat sufficient to fry the fish in, add a little lard. When the fish are fried enough, take them up; for good plain gravy, mix two or three teaspoonsful of flour with a little water, and stir it into the fat the fish was fried in, put in a little butter, pepper, and salt, if you wish to have the gravy rich add spices, ketchup, and wine, turn the gravy over the fish. Boiled fish should be served up with drawn butter, or liver sauce. Fish, when put on the platter, should not be laid over each other if it can be avoided, as the steam from the under ones make those on the top so moist that they will break to pieces when served out.

Great care and punctuality are necessary in cooking fish. If not done sufficiently, or if done too much, they are not good. They should be eaten

as soon as cooked. For a garnish to the fish, use parsley, a lemon, or eggs boiled hard, and cut in slices.

CHOWDER.—Fry three or four slices of pork till brown, cut each of your fish into five or six slices, flour, and put a layer of them into your pork fat, sprinkle on pepper and a little salt—add cloves, mace, and sliced onions if you like—lay on several bits of your fried pork, and crackers previously soaked soft in cold water. This process repeat till you get in all the fish, then turn on water enough to just cover them—put on a heated bake pan lid. When the fish have stewed about twenty minutes, take them up and mix a couple of teaspoonsful of flour with a little water, and stir it into the gravy, also a little butter and pepper. Half a pint of white wine, spices, and ketchup, will improve it. Bass and cod make the best chowder, black fish and clams make tolerably good ones. The hard part of the clams should be cut off and thrown away.

STUFFED AND BAKED FISH.—Soak bread in cold water till soft, drain off the water, mash the bread fine, mix it with a tablespoonful of melted butter, a little pepper and salt—a couple of raw eggs makes the dressing cut smoother—add spices if you like. Fill the fish with the dressing, sew it up, put a teacup of water in your bake pan, and a small piece of butter, lay in the fish, bake it from forty to fifty minutes. Fresh cod, bass, and shad, are suitable fish for baking.

FISH CAKES.—Cold boiled fresh fish, or salt codfish, is nice minced fine, with potatoes, moistened with a little water, and a little butter put in done up into cakes the size of common biscuit, and fried brown in pork fat or butter.

FISH FORCE-MEAT BALLS.—Take a little uncooked fish, chop it fine, together with a little raw salt pork; mix it with one or two raw eggs, a few bread crumbs and season the whole with pepper and spices. Add a little ketchup if you like, do them up into small balls, and fry them till brown.

CLAMS.—Wash and put them in a pot, with just water enough to prevent the shells burning at the bottom of the pot. Heat them till the shells open—take the clams out of them, and warm them with a little of the clam liquor, a little salt, butter, and pepper. Toast a slice or two of bread, soak it in the clam liquor, lay it in a deep dish, and turn the clams on to it. For clam pancakes, mix flour and milk together to form a thick batter—some cooks use the clam liquor, but it does not make the pancakes as light as the milk. To each pint of the milk put a couple of eggs and a few clams—they are good taken out of the shells without stewing, and chopped fine, or stewed, and put into the cakes whole. Very large long clams are good taken out of the shells without stewing, and broiled.

STEWED OYSTERS.—Strain the oyster liquor, rinse the bits of shells off the oysters, then turn the liquor back on to the oysters, and put them in a stew-pan—set them where they will boil up, then turn them on to buttered toast—salt, pepper, and butter them to your taste. Some cooks add a little walnut ketshup, or vinegar. The oysters should not be cooked until just before they are to be eaten.

TO FRY OYSTERS.—Take those that are large, dip them in beaten eggs, and then in flour or fine bread crumbs—fry them in lard, till of a light brown. They are a nice garnish for fish. They will keep good for several months if fried when first caught, salted and peppered, then put into a bottle, and corked tight. Whenever they are to be eaten, warm them in a little water.

OYSTER PANCAKES.—Mix equal quantities of milk and oyster juice together. To a pint of the liquor when mixed, put a pint of wheat flour, a few oysters, a couple of eggs, and a little salt. Drop by the large spoonful into hot lard.

OYSTER PIE.—Line a deep pie-plate with pie crust; fill it with dry pieces of bread, cover it over with puff paste; bake it till a light brown, either in a quick oven or bake pan. Have the oysters just stewed by the time the crust is done; take off the upper crust, remove the pieces of bread, put in the oysters, season them with salt, pepper, and butter. A little walnut ketchup improves the pie, but is not essential—cover it with the crust.

SCALLOPED OYSTERS.—Pound rusked bread or crackers fine; butter scallop shells or tins, sprinkle on the bread crumbs, then put in a layer of oysters, a small lump of butter, pepper, salt, and a little of the oyster juice; then put on another layer of crumbs and oysters, and so on till the shells are filled, having a layer of crumbs at the top. Bake them till a light brown.

DIRECTIONS FOR PICKLING.—Vinegar for pickling should be good, but not of the sharpest kind. Brass utensils should be used for pickling. They should be thoroughly cleaned before using, and no vinegar should be allowed to cool in them, as the rust formed by so doing is very poisonous. Boil alum and salt in the vinegar, in the proportion of half a teacup of salt, and a tablespoonful of alum, to three gallons of vinegar. Stone and wooden vessels are the only kind of utensils that are good to keep pickles in. Vessels that have had any grease in will not do for pickles, as no washing will kill the grease that the pot has absorbed. All kinds of pickles should be stirred up occasionally. If there are any soft ones among them, they should be taken out, the vinegar scalded, and turned back while hot—if very weak, throw it away and use fresh vinegar. Whenever any scum

rises, the vinegar needs scalding. If you do not wish to have all your pickles spiced, it is a good plan to keep a stone pot of spiced vinegar by itself, and put in a few of your pickles a short time before they are to be eaten.

WHEAT BREAD.—For six common sized loaves of bread, take three pints of boiling water, and mix it with five or six quarts of flour. When thoroughly mixed, add three pints of cold water. Stir it till the whole of the dough is of the same temperature. When lukewarm, stir in half a pint of family yeast (if brewer's yeast is used, a less quantity will answer), a tablespoonful of salt, knead in flour till stiff enough to mould up, and free from lumps. The more the bread is kneaded, the better it will be. Cover it over with a thick cloth, and if the weather is cold, set it near a fire. To ascertain when it has risen, cut it through the middle with a knife—if full of small holes like a sponge, it is sufficiently light for baking. It should be baked as soon as light. If your bread should get sour before you are ready to bake it, dissolve two or more teaspoonsful of saleratus (according to the acidity of it) in a teacup of milk or water, strain it on to the dough, work in well—then cut off enough for a loaf of bread, mould it up well, slash it on both sides to prevent its cracking when baked, put it in a buttered tin pan. The bread should stand ten or twelve minutes in the pan before baking it. If you like your bread baked a good deal, let it stand in the oven an hour and a half. When the wheat is grown, it makes better bread to wet the flour entirely with boiling water. It should remain till cool before working in the yeast. Some cooks have an idea that it kills the life of the flour to scald it, but it is a mistaken idea—it is sweeter for it, and will keep good much longer. Bread made in this way is nearly as good as that which is wet with milk. Care must be taken not to put the yeast in when the dough is hot, as it will scald it, and prevent its rising. Most ovens require heating an hour and a half for bread. A brisk fire should be kept up, and the doors of the room should be kept shut if the weather is cold. Pine and ash, mixed together, or birch wood, is the best for heating an oven. To ascertain if your oven is of the right temperature, when cleaned, throw in a little flour; if it browns in the course of a minute, it is sufficiently hot; if it turns black directly, wait several minutes before putting in the things that are to be baked. If the oven does not bake well, set in a furnace of live coals.

SPONGE BREAD.—For four loaves of bread, take three quarts of wheat flour and the same quantity of boiling water; mix them well together. Let it remain till lukewarm, then add a teacupful of family, or half a teacup of distillery yeast. Set it in a warm place to rise. When light, knead

in flour till stiff enough to mould up, then let it stand till risen again, before moulding it up.

Rye Bread.—Wet up rye flour with lukewarm milk (water will do to wet it up with, but it will not make the bread so good). Put in the same proportion of yeast as for wheat bread. For four or five loaves of bread, put in a couple of teaspoonsful of salt. A couple of tablespoonsful of melted butter makes the crust more tender. It should not be kneaded as stiff as wheat bread, or it will be hard when baked. When light, take it out into pans without moulding it up; let it remain in them about twenty minutes before baking.

Brown Bread.—Brown bread is made by scalding Indian meal, and stirring into it, when lukewarm, about the same quantity of rye flour as Indian meal; add yeast and salt in the same proportion as for other kinds of bread. Bake it between two and three hours.

Indian Bread.—Mix Indian meal with cold water, stir it into boiling water, let it boil half an hour; stir in a little salt, take it from the fire, let it remain till lukewarm, then stir in yeast and Indian meal to render it of the consistency of unbaked rye dough. When light, take it out into buttered pans, let it remain a few minutes, then bake it two hours and a half.

Potato Bread.—Boil the potatoes very soft, then peel and mash them fine. Put in salt and a very little butter; then rub them with the flour; wet the flour with lukewarm water, then work in the yeast and flour till stiff to mould up. It will rise quicker than common wheat bread, and should be baked as soon as risen, as it turns sour very soon. The potatoes that the bread is made of should be mealy, and mixed with the flour in the proportion of one-third of potatoes to two-thirds of flour.

Rice Bread.—Boil a pint of rice till soft; then mix it with a couple of quarts of rice or wheat flour. When cool, add half a teacup of yeast, a little salt, and milk to render it of the consistency of rye bread. When light bake it in small buttered pans.

French Rolls.—Turn a quart of lukewarm milk on to a quart of flour. Melt a couple of ounces of butter, and put to the milk and flour, together with a couple of eggs, and a teaspoonful of salt. When cool, stir in half a teacup of yeast, and flour to make it stiff enough to mould up. Put it in a warm place. When light do it up into small rolls; lay the rolls on flat buttered tins; let them remain twenty minutes before baking.

Butter Biscuit.—Melt a teacup of butter, mix it with two thirds of a pint of milk (if you have not any milk, water may be substituted, but the biscuit will not be as nice). Put in a teaspoonful of salt, half a tea-

cup of yeast (milk yeast is the best, see directions for making it)—stir in flour till it is stiff enough to mould up. A couple of eggs improve the biscuit, but are not essential. Set the dough in a warm place; when risen, mould the dough with the hand into small cakes, lay them on flat tins that have been buttered. Let them remain half an hour before they are baked.

Buttermilk Biscuit.—Dissolve a couple of teaspoonfuls of saleratus in a teacup of sour milk—mix it with a pint of buttermilk, and a couple of teaspoonsful of salt. Stir in flour until stiff enough to mould up. Mould it up into small cakes and bake them immediately.

Hard Biscuit.—Weigh out four pounds of flour, and rub three pounds and a half of it with four ounces of butter, four beaten eggs, and a couple of teaspoonfuls of salt. Moisten it with milk, pound it out thin with a rolling-pin, sprinkle a little of the reserved flour over it lightly, roll it up and pound it out again, sprinkle on more of the flour—this operation continue to repeat till you get in all the reserved flour; then roll it out thin, cut it into cakes with a tumbler, lay them on flat buttered tins, cover them with a damp cloth to prevent their drying. Bake them in a quick oven.

Potato Biscuit.—Boil mealy potatoes very soft, peel and mash them. To four good-sized potatoes put a piece of butter of the size of a hen's egg, and a teaspoonful of salt. When the butter has melted, put in half a pint of cold milk. If the milk cools the potatoes, put in a quarter of a pint of yeast, and flour to make them of the right consistency to mould up. Set them in a warm place; when risen, mould them up with the hand—let them remain ten or fifteen minutes before baking them.

Sponge Biscuit.—Stir into a pint of lukewarm milk half a teacup of melted butter, a teaspoonful of salt, half a teacup of family, or a tablespoonful of brewers' yeast (the latter is the best); add flour till it is a very stiff batter. When light, drop this mixture by the large spoonful on to flat buttered tins, several inches apart. Let them remain a few minutes before baking. Bake them in a quick oven till they are a light brown.

Crackers.—Rub six ounces of butter with two pounds of flour—dissolve a couple of teaspoonfuls of saleratus in a wine-glass of milk, and strain it on to the flour—add a teaspoonful of salt, and milk enough to enable you to roll it out. Beat it with a rolling-pin for half an hour, pounding it out thin—cut it into cakes with a tumbler—bake them about fifteen minutes, then take them from the oven. When the rest of your

things are baked sufficiently, take them out, set in the crackers, and let them remain till baked hard and crispy.

Cream Cakes.—Mix half a pint of thick cream with the same quantity of milk, four eggs, and flour to render them just stiff enough to drop on buttered tins. They should be dropped by the large spoonful several inches apart, and baked in a quick oven.

Crumpets.—Take three teacups of raised dough, and work into it with the hand half a teacup of melted butter, three eggs, and milk to render it a thick batter. Turn it into a buttered bake pan, let it remain fifteen minutes, then put on a bake pan lid heated so as to scorch flour. It will bake in half an hour.

Rice Cakes.—Mix a pint of rice boiled soft with a pint of milk, a teaspoonful of salt, and three eggs beaten to a froth. Stir in rice or wheat flour till of the right consistency to fry. If you like them baked, add two more eggs, and enough more flour to make them stiff enough to roll out, and cut them into cakes.

Buckwheat Cakes.—Mix a quart of buckwheat flour with a pint of lukewarm milk (water will do, but is not as good), and a teacup of yeast; set it in a warm place to rise. When light (which will be in the course of eight or ten hours if family yeast is used; if brewers' yeast is used they will rise much quicker), add a teaspoonful of salt—if sour, the same quantity of saleratus, dissolved in a little milk and strained. If they are too thick, thin them with cold milk or water. Fry them in just fat enough to prevent their sticking to the frying pan.

Green-Corn Cake.—Mix a pint of grated green-corn with three tablespoonsful of milk, a teacup of flour, half a teacup of melted butter, one egg, a teaspoonful of salt, and half a teaspoonful of pepper. Drop this mixture into hot butter by the spoonful, let the cakes fry eight or ten minutes. These cakes are nice served up with meat for dinner.

Indian-Corn Cake.—Stir into a quart of sour or butter-milk a couple of teaspoonsful of saleratus, a little salt, and sifted Indian meal to render it a thick batter—a little cream improves the cake—bake it in deep cake pans about an hour. When sour milk cannot be procured, boil sweet milk, and turn it on to the Indian meal; when cool put in three beaten eggs to a quart of the meal, add salt to the taste.

Indian Slap Jacks.—Scald a quart of Indian meal, when lukewarm turn, stir in half a pint of flour, half a teacup of yeast, and a little salt. When light fry them in just fat enough to prevent their sticking to the frying pan. Another method of making them, which is very nice, is to turn boiling milk or water on to the Indian meal, in the proportion

of a quart of the former to a pint of the latter, stir in three tablespoonsful of flour, three eggs well beaten, and a couple of teaspoonsful of salt.

JOHNNY CAKES.—Scald a quart of sifted Indian meal with sufficient water to make it a very thick batter; stir in two or three teaspoonsful of salt, mould it with the hand into small cakes. In order to mould them up it will be necessary to rub a good deal of flour on the hands, to prevent their sticking. Fry them in nearly fat enough to cover them. When brown on the under side they should be turned. It takes about twenty minutes to cook them. When cooked, split and butter them. Another way of making them which, is nice, is to scald the Indian meal, and put in saleratus, dissolved in milk, and salt in the proportion of a teaspoonful of each to a quart of meal. Add two or three tablespoonsful of wheat flour and drop the batter by the large spoonful into a frying pan. The batter should be of a very thick consistency, and there should be just fat enough in the frying pan to prevent the cakes sticking to it.

HOE CAKES.—Scald a quart of Indian meal with just water enough to make a thick batter; stir in a couple of teaspoonsful of salt, and two tablespoonsful of butter; turn it into a buttered bake pan, and bake it half an hour.

MUFFINS.—Mix a quart of wheat flour smoothly with a pint and a half of luke warm milk, half a teacup of yeast, a couple of beaten eggs, a heaping teaspoonful of salt, and a couple of tablespoonsful of lukewarm melted butter; set the batter in a warm place to rise: when light, butter your muffin cups, turn in the mixture, and bake the muffins till a light brown.

RAISED FLOUR WAFFLES.—Stir into a quart of flour sufficiently lukewarm milk to make a thick batter—the milk should be stirred in gradually so as to have it free from lumps—put in a tablespoonful of melted butter, a couple of beaten eggs, a teaspoonful of salt, and half a teacup of yeast; when risen, fill your waffle-irons with the batter, bake them on a hot bed of coals. When they have been on the fire between two and three minutes, turn the waffle-irons over; when brown on both sides they are sufficiently baked. The waffle-irons should be well-greased with lard, and very hot, before each one is put in. The waffles should be buttered as soon as cooked, Serve them up with powdered white sugar and cinnamon.

QUICK WAFFLES.—Mix flour and cold milk together, to make a thick batter. To a quart of the flour put six beaten eggs, a tablespoonful of

melted butter, and a teaspoonful of salt. Some cooks add a quarter of a pound of sugar, and half a nutmeg. Bake them immediately.

RICE WAFFLES.—Take a teacup and a half of boiled rice, warm it with a pint of milk, mix it smooth, then take it from the fire, stir in a pint of cold milk and a teaspoonful of salt. Beat four eggs, and stir them in, together with sufficient flour to make a thick batter.

RICE WAFERS.—Melt a quarter of a pound of butter, and mix it with a pound of rice flour, a tablespoonful of salt, and a wine glass of wine. Beat four eggs, and stir in, together with just cold milk enough to enable you to roll them out easily. They should be rolled out as thin as possible, cut with a wine glass into cakes, and baked in a moderate oven, on buttered flat tins.

Driving.

DRIVING A SINGLE HORSE.

TAKING YOUR SEAT.—In commencing these instructions, we will suppose your horse to have been harnessed and brought to your door. It is of course to be expected that the groom has seen to his shoes, his harness, and the axles of the wheels; still no prudent driver would mount a vehicle in which was a high-couraged horse, without looking to see that the reins were properly fastened to the bit, the head-piece properly on, the throat-lash fastened, the traces, back-band and belly-band quite as they ought to be, nor indeed without giving a look around his horse to see that his shoes were on, which can of course be done without holding up the foot; and we will here remark, that if it be necessary to see that the main points of your harness are right, when you have the advantage of the daylight, it is even more necessary that a critical examination take place by night; this can be effected as well by the hand as by the eyes; and we should advise you particularly to observe that the reins are correctly placed, as many accidents have arisen from their being crossed. Having attended to these things, take the reins and whip in your right hand; then mount the

vehicle, and transfer the reins to the left hand, one of them (the near rein) passing over the upper finger, the other between it and the next; then close the thumb upon them, and they will be firmly grasped in the hand. Whilst turning, or when driving a high-couraged horse, and in critical situations generally, the right hand must be at all times called to the assistance of the left; thus the reins being grasped as before stated, you pass the second and third fingers between them, and loosening your hold on the off rein a little, let the right hand have complete control of its guidance, still, however, firmly holding both reins in your left. This position gives you great power over your horse.

STARTING.—Holding your reins as described, start your horse either by your voice or by the reins gently feeling his mouth, but neither pulling at it, nor jerking the reins. Many high-couraged horses have been made jibbers by the stupidity of a driver. If a young horse's mouth is hurt, by the driver checking him every time he starts, he will be sure to incur some vice; the habit of rearing or of jibbing will most probably be the result. The learned may say, "Suppose, however, he refuse to start, what then is to be done?" We reply, have patience, let the groom lead him off, caress him, speak quietly and encourage him to proceed, and if he presses on one side, as if he wanted to go round, turn him round, if there be room, and as soon as he has his head the right way, give him his liberty, and, by the voice or the whip, urge him to proceed. Much must here be left to the judgment; a touch with the whip in such circumstances would make some horses jib, while it would immediately start others; some it would be advisable to urge only with the voice, and to have a person to push the gig on, so that the collar should scarcely touch the shoulder in starting. Supposing there is not room for the horse to turn, and he persists in his attempt to do so, we have always found it best in such a case to desire the groom to let his head alone, and to go to the side towards which the horse is inclined to turn, and then push against the extreme end of the shaft; if he does this, speaking quietly to him all the time, forty-nine horses out of fifty, that are not irreclaimable jibbers, will after a short struggle, proceed. The sooner you get rid of a confirmed jibber the better; no quality such a brute can possess would repay you for the trouble the vice occasions; which is, besides, always a dangerous one.

THE ROAD.—Having started your horse, keep your eyes open, looking well before you, not merely for the purpose of avoiding other carriages, but looking up the road, and on each side of it, so as to notice if there be any impediment to your horse's progress; any loose stones which he might tread upon, and thereby be thrown down; any sudden rising or fallings in

the road, or any object which might frighten him. Always keep your horse well in hand—that is, feel his mouth; if you do not, you are never prepared for emergencies: if he stumbles, you cannot help him to revover his legs; if he starts, you cannot check him. But in keeping him in hand, as it is called, you may still fall into error, for if the horse be very light in the mouth, there is a probability that an inexperienced person may so check him as not only to impede his progress, but to put him out of temper; and as nothing is more difficult for a novice to manage than a very light-mouthed horse, when he once takes it in his head to have his own way, you must be careful merely to feel his mouth so as to have the reins at command, but still not sufficiently tight to check him; this is called driving with a light hand, and indeed is the perfection of driving, when it has become so habitual as to have assumed the character of "a style."

DIFFICULT SITUATIONS FOR YOUNG DRIVERS.

Tusking the Bit and Running Away.—Some ill-tempered horses will become violent upon being in any manner put out of their way—such, for instance, as being suddenly stopped two or three times within a short distance, or receiving a sudden cut with the whip; but instead of exhibiting this violence by rearing or kicking, they will seize the bit in their mouths, close against the tusk, and run violently to one side of the road, as if with the intention of landing you in a ditch, or giving you a resting-place in a shop-window. The best mode is to stop them at once by a quiet pull, speaking softly, as if nothing were the matter; and then coax them into good temper. If this cannot be done, give them the head for a moment (a short one it must be), and after bestowing a violent switch across the ears, snatch the reins suddenly towards the side to which the horse is bearing, which will probably, from the surprise, disengage the bit, and enable you almost simultaneously either to pull him up or draw him away from the danger. You will observe we have said on the side *to which he is pressing*, for it would be all but impossible to draw him to the other; for such a brute always seizes the bit by the branch or side which is next to the place he is running to, knowing or rather thinking, you will pull the other rein, in which case the side of the face would aid him in resisting your efforts. The remedy for this is a ring bit, for it has no branches for the horse to get hold of, and if he merely seizes that part of the bit which is in his mouth, a sudden jerk will instantly disengage it, that is, if it be done with sufficient decision.

Frequently, however, a horse tusks the bit, as it is called, with a view of bolting; if you cannot disengage the bit in the way directed, you have

only to stop him as quickly as you can. Recollect, however, that a continual dead pull will never stop a runaway horse, unless indeed you have the strength of Hercules; his mouth soon becomes callous to the action of the sharpest bit. Nor is it proper to keep jerking a horse under such circumstances, as that would rather urge him to increase his speed. The ordinary mode is to take the reins short in your hands, and then by a sudden, steady movement of the body backwards, exerting at the same time all the strength of the arms, endeavour to pull him up; this, repeated two or three times, will generally be effectual. Suppose it not to succeed, adopt the following plan: Cross the reins in your hand—that is, place the right rein in the left hand, the left in the right hand—take them very short, and then suddenly put all your strength to them with a sudden jerk but continue the pressure, violently sawing them at the same time; if this will not bring the horse to his haunches at the first attempt, let him partially have his head—that is, sufficiently slacken your pull to give his mouth time to recover its feeling—and then repeat the effort.

Stumbling and Slipping.—If your horse be kept well in hand, you will generally be able to keep him from absolutely coming down. You will naturally put more force to your pull upon his making the stumble, and this jerk, if succeeded by a strong, continuous aid, generally keeps him on his legs; a smart stroke with the whip should follow, to remind him that this carelessness is not to be repeated. A horse that is apt to stumble, or even one that from his form is likely to stumble, should not only always be kept well in hand, but also be kept alive by now and then being reminded, without actually punishing him, that his driver has a whip in his hand. A horse with his head set too forward—that is, low in the withers—is almost sure to come down sooner or later, particularly if his fore-legs "stand at all under him," as it is technically termed—that is slant a little inward. Stumbling, however, be it remembered, is totally distinct from slipping; wood pavements will give the tyro plenty of opportunities of seeing the difference. If a horse slips, a sudden jerk would probably throw him down; in such a case the driver must aid the horse by a strong steady hold, letting him, as it were, lean on the bit to help himself to stand. It requires some nerve thus to aid the horse without being induced to jerk him by the suddenness of the slip.

Jibbing is that sort of obstinacy in a horse which causes him to plant his fore-feet upon the ground and refuse to move. If we are asked what is the best mode to adopt with a jibber, we say, Patience! This, however, must be qualified by the temper of the horse. Some jibbers (*but very few*) may be started by sudden and severe whipping; ninety-nine

times out of a hundred it will render a jibber restive, mischievous, or obstinate. Experience only can dictate the management of such animals. Some will start after waiting for a short time, having their head free; coaxing is generally the best means, and, as before said, have patience, and do not be in too great a hurry to start. Some may be started by being turned round, and others, by being backed for a short distance. Many think it a good plan to punish a jibber when he is once started; our experience proves the contrary, for, depend upon it, he will recollect this next time, and will not fail further to exercise your patience for fear of the flogging. Kindness and good driving may cure a horse who is not a confirmed jibber; but when once this vice has become habitual, you can never depend upon the horse; as we have said before, get rid of him.

KICKING.—An experienced eye can generally tell if a horse is likely to kick, and also when he is about to kick. We, however, always drive with a kicking-strap, and would recommend the practice. When a horse attempts to kick, you must hold him well in hand, and lay the whip well into him about the ears, rating him at the same time with a loud voice; this plan we have generally found effective.

REARING.—Little can be done in harness with a determined rearer. When he tries to rear, if you have room, give him half a turn; this will make him move his hind-legs, and will consequently bring him down; you will find a series of turns punish and surprise him more than anything else. When you have got him on the move, with his head the right way, you can punish him with the whip, if he is one that you are sure you can manage; if not, you had better leave well alone. With respect to rearing in double harness, we will here observe, the best way to act is, to push the other horse forward, and soothe the restive one, until you have fairly got him on; you can then punish or not, according to your judgment, but not without reference to your ability to manage the horses.

SHYING.—Before a horse starts at anything on the side of the road, or lying on the road, he usually gives some notice of his intention, by cocking his ears, and bending his head towards the object. As soon as the driver perceives these signs of uneasiness, he should be upon his guard to prevent a sudden turn round, or flying to one side, which would evidently be dangerous; and not only on this account should he be attentive, but because each time the horse violently shies, the habit is in progress of being confirmed. As soon, therefore, as a horse, accustomed to shy, gives notice of uneasiness, he should be coaxed up to the object of his terror, so that he may perceive its harmlessness; let him deliberately stand and

view it, let it, if possible, be brought to him, and then replaced in its former position; thus let him be induced to go up to it by care and kindness before it is passed, and you will generally find that a repetition of this practice will greatly improve, if it do not cure him; but by no means flog or force him up to it—let him take his time. Some horses have a nasty knack of flying on one side in passing, or flying around on meeting a carriage; care and patience are the remedies, in addition to more work. It very frequently arises from playfulness rather than vice; and giving them more work to do will cure this. A experienced hand may force a horse forward, under such circumstances, by the reins and whip; but we recommend the tyro rather to slacken his pace upon meeting an object that his horse will go round, or attempt to go round at; by doing this, and speaking kindly, the animal will either be soothed or diverted from his purpose.

DRIVING TWO HORSES.

We have addressed most of our remarks to a person driving a single horse, for this reason, that it is much more difficult to drive one horse, than it is to drive a pair, that is, if you have sufficient nerve. In almost all situations of difficulty, you can make the second horse assist you in managing the other; if the one shies, and will go to the right—we will suppose it is the near wheeler—by opposing the strength of the other to him, which you will do by the reins, touching him with the whip on the off-side, you will prevent any very great deviation from the straight line. Again, if one will not start readily, the other, generally speaking, may be made to pull him on; in this case, never hit the restive horse; or at any rate until your judgment is sufficiently matured to determine whether it will do good or harm. Suppose the one tries to run away—if he is an ill-tempered brute, it may sometimes be advisable not to irritate him by hard pulling—then all you have to do is to keep back the other, and he must shortly be beaten, as he will not only have the carriage and its contents opposed to him, but the weight and strength of his companion to pull against. Sometimes a horse will be awkward in turning a corner, here again his companion assists you; if he turns too quick, the other opposes him; if not sufficiently so, a touch with the whip makes the other force him on. Instead of its being more difficult to drive two horses than one, as the tyro doubtless imagines, it is, in fact just the reverse, when he has obtained sufficient confidence to attempt it. But although it is easier to manage two horses than one, it requires much more attention in some

respects; you must continually watch them, or, perhaps, one will do all the work while the other is doing nothing.

THE SEAT.—When driving, sit quite straight towards your horses, and rather more to the middle than to the off-side of the box-seat. Keep your body nearly upright, or inclined a little backward rather than forward, and your feet well together, extended upwards, and on no account doubled under your legs; a firm seat is indispensable for your own safety and that of the friends you may be driving, therefore never sit with your feet doubled under you, for a sudden jolting of the carriage, or increase of the pace of your horses, may capsize you into the road. Never ride in a vehicle that has the wheels secured only by a common linchpin, for accidents arising from wheels, thus fastened, coming off, are generally of a serious character.

ACCIDENTS.—As accidents are usually unforeseen, the suddenness with which they arrive is apt to unnerve the rider, and so sure as this be the case, his judgment will be at fault. Presence of mind should, therefore, be exercised on all occasions of danger. With kicking horses before you (unless you are in a gig), the best plan is to let the whip take it out of them. With runaways, never think of deserting the box by jumping off, for there is a chance of your being able to pull them up, but none of your escaping severe contusions, if not broken limbs or loss of life, should you throw yourself from the vehicle.

DOWN HILL.—If these are of an ordinary character, we would not advise locking the wheel except with a heavy load, or when your horses will not hold back; besides the trouble, locking is a great disadvantage, for by letting out your horses when you have passed the pitch of a hill, the motion of the carriage takes it half way up an ordinary rise before your horses feel the weight, and this, in a day's journey, will be found of considerable importance. If your horses will not hold back, or are not masters of their load, locking the wheel becomes necessary when the hill is long or steep. When the hill is not very steep, and the near edge of the road happens to be of a rough, rutty nature, or has gravel or granite strewn upon it, take your near wheel a few inches from the resisting substance, which will supply the additional friction, or *bite* necessary to check the increasing momentum of a downward pace, and obviate the necessity of skidding.

STOPPING.—When pulling up, accustom your horses to stop by some signal, and draw in the reins equally, unless either of the animals shows a disinclination to obey the notice. Young horses should be stopped very

THE FACE.

gradually, and eight or ten yards allowed them to pull up in; for they are apt to resist attempts to stop them short.

MATCHING HORSES.—Some persons are particular as to the colour of their horses, but it is much more important that their paces and their tempers should match, than that their colours should be alike; for if you have one slow and the other fast—one irritable and nervous, and the other stupid and obstinate—one free, and the other like a lawyer that will not move without being paid—you are sure to weary out the free, nervous, and fast horse, by whipping up the other to his pace; and although you may hold him back, you will take as much strength out of him as though he was doing all the work. If, therefore, your horses do not match in pace and freeness, get rid of the dull one, or depend on it your work will soon kill the other; besides, you can never have any pleasure in driving.

RECORDS OF TROTTING HORSES OF 2.19 AND UNDER.

Maud S.	2.10¼	Piedmont	2.17¼
St. Julien	2.11¼	Edwin Thorne	2.17½
Rarus	2.13¼	Santa Claus	2.17½
Goldsmith Maid	2.14	Hannis	2.17¾
Trinket	2.14	Proteine	2.18
Hopeful	2.14¾	Judge Fullerton	2.18
Lulu	2.15	Nettie	2.18
Smuggler	2.15¼	Red Cloud	2.18
Hattie Woodward	2.15½	Great Eastern	2.18
Darby	2.16¼	Edwin Forrest	2.18
Lucille Golddust	2.16¼	Dick Swiveler	2.18
American Girl	2.16½	Kate Sprague	2.18
Occident	2.16¾	Robert MacGregor	2.18
Charley Ford	2.16¾	Lady Thorne	2.18¼
Gloster	2.17	Lady Maude	2.18¼
Dexter	2.17¼	Midnight	2.18¼
So So	2.17¼	Albemarle	2.19

Lacrosse, and How to Play It.

THE game of Lacrosse has, perhaps, attracted more attention amongst young men than any other field sport that has ever been introduced to their notice.

That this game, comparatively unknown until within the past few years, should have so suddenly become popular, seems almost a wonder. If ever any game has been persecuted, abused, or belied by envious rivals, that game has certainly been Lacrosse; and yet, in spite of all opposition and ridicule it has received from the adherents of older established sports—in spite of its being declared unscientific, and not at all gentlemanly, by those whose notions were rather prudish—this game has, on account of its own intrinsic merits, not only been adopted by *Young Canada* as the *National Game* of the Dominion, but has also won its way high into the favour of athletics, both in England and the United States.

It is affirmed by its opponents that there is no science in the game, it is all hard work, and is injurious to the constitution. A good player seldom hurts himself; it is only the novice who does the hard work, and gets no return for it. Lacrosse is yet in its infancy; the fine points in the game are only now becoming apparent. But the day will come when the public verdict on it, even as a scientific game, will be materially changed, and its opponents be obliged to confess that, measured only by their scientific standards, it will take its place as king of out-door sports.

Lacrosse has so many advantages over other games that, perhaps, it will not be out of place to mention a few of them. It is the cheapest of all games. It requires no pads, gauntlets, or other expensive equipments. A single lacrosse stick, and simple running gear is all that is required for action. It developes the muscles better than any sport we know of. The muscular action is confined to no particular part, as in rowing, skating, or football—it exercises equally the arms, legs and body, and at the same time there is sufficient excitement about it to make it the most fascinating of games. It develops self-reliance, and awakens the energies of all who would excel in it. It is conducive to temperance and sobriety, for

no young man can belong to a "*first twelve*," or be a "*crack*" player, who does not attend to his way of living, and shun entirely the flowing bowl, or other vices of a more questionable character. It is so simple to look at that anyone can readily master its first principles in a few minutes, but to excel at it requires careful and steady practice, which not only acts healthfully on the body, but exercises an exhilarating effect upon the mind.

The game is always alive, and no player need ever complain that he has not had innings enough. As a matter of fact, it is nearly all innings, if a player only chooses to make it so.

THE ORIGINAL GAME.

Lacrosse, or *Bagataway*, as it was originally called, is an Indian game, and was used by them not only as a recreation, but also as a training school in which to quicken and strengthen the body, and accustom their young warriors to close combat so as to fit them for the sterner realities of the war path. It was a sport emphatically suited to the nature and development of the young Indian warriors, and it is not surprising, as an old writer tells us, that amongst some of the tribes it became "the chief object of their lives."

The original game had no fixed or definite rules by which it was governed: each tribe laid down laws of its own, but in all cases it was mind which was made subservient to matter, instead of *vice versa*.

As far back as we can trace, we find the original *Crosse* to have been of a very different shape to that in present use. Those of the Choctaws, Chippewas, Cherokees and Creeks were about three feet long, bent into an oblong hoop, at one end large enough to hold the ball. Those of the Sacs, Sioux, Obijways, Dacotahs, Six Nations, Poutawatamies, and most other tribes, were about the same length, but the hoop was circular. None of the original sticks were over four feet long. The net-work of the oblong hoop was generally three inches long and two wide; that of the round hoops twelve inches in circumference. The former was literally net-work, but the latter was simply two strings tied in the centre and fastened in four places to the hoop; and both were sufficiently bagged to catch and hold the ball. The net-work or strings were originally of *wattup* (the small roots of the spruce tree used for sewing bark canoes); afterwards they were made of deerskin. Among the Chocktaws, Cherokees, Creeks, &c., each player carried two sticks, one in each hand. The ball was caught and carried between them. There was considerable difference n the play with one stick and two—the former by far the most difficult.

The manner of picking up was peculiar, owing to its shape. As the ball lay on the ground, it was almost covered with the hoop, and by a peculiar twist of the wrist and arm from left to right, scooped up in one motion. The ball was thrown from it by a jerk, and could not be pitched so far as with the present stick, as it received but little impetus. The Indians dodged very little, except when the ball was caught or picked up in a crowd, and dodging was necessary. This seems the more remarkable when we consider the shape of the stick, and the peculiar facilities for dodging afforded by the concavity of the netting, and the smallness of the hoop which retained the ball.

The original *Ball* was about the size of a tennis ball though differing among the tribes, and was first made of deerskin or rawhide, stuffed with hair, and sewed with sinews. Some of the tribes used a heavy wooden ball—generally a knot—while others improvised balls of the bark of the pine-tree.

The earliest *Goal* was any marked rock or tree that happened to be convenient. At grand matches, however, they were more particular, and used for each goal a single pole or stake, eight feet high and two inches in diameter, or two poles as at present. The distance between the gaols varied in proportion to the number of players, from five hundred yards to a mile and a half and more. Where only one flag pole was used, it was counted game by merely putting the ball past the line of the pole although in some tribes the pole was required to be struck with the ball before it could be counted game.

The *Umpires* were generally the old medicine men of the tribe, whose decision was in all cases final.

The *Dress* of the players was generally as primitive as can be imagined —wearing only a light breech-cloth, and on grand occasions painting their faces and bodies, and decorating themselves with fantastic beadwork and feathers of various colours. Some tribes wore a curious kind of tail fastened to the small of the back, made of white horse-hair, or dyed porcupine quills, and a mane or neck of horse-hair dyed various colours.

Their matches were not decided like ours by the winning of three games out of five, but sometimes lasted for days together. They were really trials of strength and endurance as well as of skill.

LAWS OF LACROSSE.

Revised and adopted at the reorganization of the National Amateur Lacrosse Association of Canada, Toronto, 4th May, 1876, *and amended at Montreal, August 3rd,* 1877, *Toronto, June 7th,* 1878, *Montreal, June 6th,* 1879, *Toronto, June 4th,* 1880, *Montreal, June 3rd,* 1881, *Toronto, June 3rd,* 1882, *and Montreal, April 13th,* 1883.

Rule I.—The Crosse.

Section 1. The Crosse may be of any length to suit the player; woven with cat-gut, which must not be bagged. ("Cat-gut" is intended to mean raw-hide, gut, or clock-string; not cord or soft leather). The netting must be flat when the ball is not on it. In its widest part the crosse shall not exceed one foot. A string must be brought through a hole at the side of the tip of the turn, to prevent the point of the stick catching an opponent's crosse. A leading-string resting upon the top of the stick may be used, but must not be fastened, so as to form a pocket, lower down the stick than the end of the length-strings. The length-strings must be woven to within two inches of their termination, so that the ball cannot catch in the meshes.

Sec. 2. No kind of metal, either in wire or sheet, nor screws or nails, to stretch strings, shall be allowed upon the crosse. Splices must be made either with string or gut.

Sec. 3. Players may change their crosses during a match.

Rule II.—The Ball.

The Ball must be India-rubber sponge, not less than eight, nor more than nine inches in circumference. In matches it must be furnished by the challenged party.

Rule III.—The Goals.

The Goals must be at least 125 yards from each other, and in any position agreeable to the captains of both sides. The top of the flag-poles must be six feet above the ground, including any top ornament, and six feet apart. In matches they must be furnished by the challenged party.

Rule IV.—The Goal Crease.

No attacking player must be within six feet of either of the flag-poles, unless the ball has passed Cover-point's position on the field.

Rule V.—Umpires.

Section 1. There shall be one Umpire at each Goal. They shall be disinterested parties, whose reputation for truthfulness and integrity are well known and above suspicion. They shall not be members of either club engaged in a match, nor shall they be changed during its progress without the consent of both Captains.

Sec. 2. Their jurisdiction shall last during the match for which they are appointed. They shall not change goals during a match.

Sec. 3. No Umpire shall, either directly or indirectly, be interested in any bet upon the result of the match. No person shall be allowed to speak to an Umpire, or in any way distract his attention, when the ball is near or nearing his goal.

Sec. 4. They shall stand behind the flags when the ball is near or nearing their goal. In the event of game being claimed, the Umpire at that goal shall at once decide whether or not the ball has fairly passed through the flags, his decision simply being "game" or "no game," without comment of any kind. He shall not be allowed to express an opinion, and his decision shall in all cases be final, without appeal.

Sec. 5. In the event of the Field Captains failing to agree upon the Umpires, after three nominations in accordance with this rule have been made by each party, it shall be the duty of the Referee to appoint one or more Umpires, as may be required, who shall not be one of the persons objected to, who must be duly qualified as required by this rule. In championship matches they shall be appointed the day previously.

Sec. 6. If, after the commencement of a match, it becomes apparent that either Umpire, on account of partizanship, bets on the match, or any other cause, is guilty of giving unjust decisions, the side offended against may enter a protest with the Referee against his conduct, and ask for his immediate removal. After hearing the evidence on both sides, the Referee shall decide whether he shall be dismissed or continue in office. If dismissed, the Referee shall at once appoint another Umpire to act in his stead. Any decision, however, which he may have given previous to his dismissal shall hold good.

Rule VI.—Referee.

Section 1. The Referee shall be selected by the Captains; and in the case of "Championship" matches, must be appointed at least one day before the match. When the Captains have agreed upon a Referee, they shall make a written memorandum in duplicate of the agreement, which shall be

signed by both captains. His authority shall commence from the time of his appointment. No person shall be chosen to fill the position who is not thoroughly acquainted with the game, and in every way competent to act. He must be a disinterested party, and neither directly nor indirectly interested in any bet upon the result of the match. In the event of the Field Captains failing to agree upon a Referee the day previous to a match, it shall be the duty of the President of the National Amateur Lacrosse Association, or in his absence from the country, or owing to the impossibility of his being communicated with, the Vice-President, upon being duly notified, to appoint a Referee to act during the match; such Referee, however, not to be one of the number proposed by either of the competing clubs.

Sec. 2. Before the match begins, the Referee shall see that properly qualified Umpires are selected, as provided for in Rule V. He shall also obtain from each of the Captains a declaration and list of their team, and shall satisfy himself that the players are *bona fide* members of the team they represent, in accordance with Sec. 1, Rule IX. All disputed points and matters of appeal that may arise during his continuance in office shall be left to his decision, which, in all cases, must be final, without appeal.

Sec. 3. Before the match begins, he shall draw the players up in lines, and see that the regulation respecting the ball, crosses, spiked soles, etc., are complied with. He shall also see that the regulations respecting the goals are adhered to. He shall know before the commencement of a match the number of games to be played, time for stopping, and any other arrangements that may have been made by the Captains. He shall have the power to suspend at any time during the match any player infringing these laws—the game to go on during such suspension.

Sec. 4. When "foul" has been called by either Captain, the Referee shall immediately cry "time," after which the ball must not be touched by either party, nor must the players move from the position in which they happen to be at the moment, until the Referee has called "play." If a player should be in possession of the ball when "time" is called, he must drop it on the ground. If the ball enters goal after "time" has been called, it shall not count.

Sec. 5. The jurisdiction of the Referee shall not extend beyond the match for which he is appointed; and he shall not decide in any matter involving the continuance of a match beyond the day on which it is played. The Referee must be on the ground at the commencement of and during the match. At the commencement of each game, and after "fouls" and "balls out of bounds," he shall see that the ball is properly

faced, and, when both sides are ready, shall call "play." He shall not express an opinion until he has taken the evidence on both sides. After taking the evidence, his decision, in all cases must be final. Any side rejecting his decision, by refusing to continue the match, shall be declared losers.

Sec. 6. When game is claimed and disallowed, the Referee shall order the ball to be faced for, from where it is picked up ; but in no case must it be closer to the goals than ten (10) yards in any direction.

Rule VII.—Captains.

Captains to superintend the play shall be appointed by each side previously to the commencement of a match. They shall be members of the club by whom they are appointed, and no other. They may or may not be players in the match ; if not, they shall not carry a crosse, nor shall they be dressed in Lacrosse uniform. They shall select Umpires and Referees, as laid down in these Rules, toss for choice of goals, and they alone shall be entitled to call "foul" during a match. They shall report any infringement of the laws during a match to the Referee. (2) Before the commencement of a match, each Captain shall furnish the Referee with a full and correct list of his twelve, and a declaration stating that they are all *bona fide* members in good standing of the club they represent, and of no other, as provided for in Sec. 1, Rule IX.

Rule VIII.—Names of Players.

The players on each-side shall be designated as follows : "Goal-keeper," who defends the goal ; "Point," first man out from goal ; "Cover-point," in front of Point ; "Centre," who faces ; "Home," nearest opponent's goal ; others shall be termed "Fielders."

THE GAME.

Rule IX.—Miscellaneous.

Section 1. Twelve players shall constitute a full field. They shall be regular members in good standing of the club they represent, and of no other, for at least thirty days before becoming eligible to play in a match for their club. No members shall be allowed to change clubs more than once during the season, except in *bona fide* change of residence.

Sec. 2. The game must be started by the Referee facing the ball in the centre of the field between a player on each side. The ball shall be laid

THE LONG THROW.

MR. ROSS MACKENZIE MAKING THE LONGEST THROW ON RECORD.

(147 YARDS.)

upon the ground between the sticks of the players facing, and when both sides are ready the Referee shall call "play." The players facing shall have their left sides towards the goal they are attacking.

Sec. 3. A match shall be decided by the winning of three games out of five, unless otherwise agreed upon. Games must in all cases be won by putting the ball through the goal from the front side.

Sec. 4. Captains shall arrange, previous to a match, whether it is to be played out in one day, postponed at a stated hour in the event of rain, darkness, etc., or to be considered a draw under certain circumstances; and, if postponed, if it is to be resumed where left off.

Sec. 5. If postponed and resumed where left off, there shall be no change of players on either side.

Sec. 6. Either side may claim at least five minutes rest, and not more than ten, between each game.

Sec. 7. No Indian shall play in a match for a white club unless previously agreed upon.

Sec. 8. After each game players must change goals.

Sec. 9. No change of players must be made after a match has commenced, except for reasons of accident or injury during the game.

Sec. 10. Should any player be injured during a match, and compelled to leave the field, the opposite side shall drop a man to equalize the teams. In the event of any dispute between the Field Captains as to the injured player's fitness to continue the game, the matter shall at once be decided by the Referee.

Sec. 11. When a match has been agreed upon, and one side is deficient in the number of players, their opponents may either limit their own number, to equalize the sides, or compel the other side to fill up the complement.

Rule X.—Spiked Soles.

No player must wear spiked soles or boots, and any player attempting to evade this law shall be immediately ruled out of the match.

Rule XI.—Touching Ball with the Hand.

The ball must not be touched with the hand, save in cases of Rules xii. and xiii.

Rule XII.—Goal-keeper.

The Goal-keeper, while defending goal within the goal-crease, may put away with his hand, or block the ball in any manner with his crosse or body.

Rule XIII.—Ball in an Inaccessible Place.

Should the ball lodge in any place inaccessible to the crosse, it may be taken out with the hand, and the party picking it up must "face" with his nearest opponent.

Rule XIV.—Ball Out of Bounds.

Balls thrown out of bounds must be "faced" for at the nearest spot within the bounds, and all the players shall remain in their places until the ball is faced. The Referee shall see that this is properly done, and when both sides are ready shall call play. The "*bounds*" must be distinctly settled by the Captains before the commencement of the match.

Rule XV.—Throwing the Crosse.

No player shall throw his crosse at a player or at the ball, under any circumstances; and such action will be considered a "foul." Should a player lose his crosse during a game, he shall consider himself "*out of play*," and shall not be allowed to touch the ball in any way until he again recovers it. Kicking is absolutely prohibited to players without a crosse.

Rule XVI.—Accidental Games.

Should the ball be accidentally put through a goal by one of the players defending it, it is game for the side attacking that goal. Should it be put through a goal by any one not actually a player it shall not count.

Rule XVII.—Ball Catching in Netting.

Should the ball catch in the netting, the crosse must immediately be struck on the ground, to dislodge it.

Rule XVIII.—Rough Play, &c.

No player shall grasp an opponent's stick with his hands, hold with his arms, or between his legs; nor shall any player hold his opponent's crosse with his crosse in any way to keep him from the ball until another player reaches it. No player, with his crosse or otherwise, shall hold, deliberately strike, or trip another, nor push with the hand; nor must any player jump at to shoulder an opponent from behind while running for or before reaching the ball; nor wrestle with the legs entwined, so as to throw an opponent.

Rule XIX.—Threatening to Strike.

Any player deliberately striking another, or raising his hand to strike, shall be immediately ruled out of the match.

Rule XX.—Deliberate Charging.

No player shall charge into another after he has thrown the ball.

Rule XXI.—Crosse Check.

The check commonly known as the "square" or "crosse" check, which consists of one player charging into another with both hands on the crosse, so as to make the stick meet the body of his opponent, is strictly forbidden.

Rule XXII.—Interfering.

No player shall interfere in any way with another, who is in pursuit of an opponent.

Rule XXIII.—Foul Play.

Section 1. Any player considering himself purposely injured during play, must report to his Captain, who must report to the Referee, who shall warn the player complained of.

Sec. 2. The penalty for fouling shall be discretionary with the Referee. For *ordinary* fouls, which in no way affect the result of the game, he shall simply caution the offender for the first offence; if repeated, the Referee may suspend him for the rest of the game (not match) in which such foul takes place.

For *deliberate* fouls, which occasion injury to opponents, or affect the result of the game—for the first offence the Referee shall have power to suspend the player committing it for the rest of the game (not match) in which such foul takes place. For a second offence, the Referee may remove the offending player, and compel his side to finish the match single-handed.

Rule XXIV.—Interrupted Matches.

In the event of a match being interrupted by darkness, or any other cause considered right by the Referee, and one side having won two games, the other none, the side having won the two games shall be declared the winners of the match. Should one side have won two games and the other one, the match shall be considered drawn. This does not

apply where special arrangements have been made by the Captains, as in Rule ix., Sec. 3.

Rule XXV.—"Claiming Games."

When "game" is claimed by the side attacking a goal, the Referee or Umpire shall immediately call "time." The Umpire shall then proceed to give his decision. Until his decision has been given no game can be taken. The players shall keep their places, nor shall they leave them (unless the game be decided as won) until the game has again been started by the Referee.

No player shall in any way attempt to influence the decision of the Umpire, whose ruling shall be final in all cases.

Rule XXVI.—Settlement of Disputes.

In the settlement of any dispute, it must be distinctly understood that the Captains, with one player to be selected by each of them, shall have the right to speak on behalf of their respective clubs; and any proposition or facts that any player may wish brought before the Referee must come through the Captains or the player selected by them.

Rule XXVII.—Flag-Pole Down.

In the event of a flag-pole being knocked down during a match, and the ball put through what would be the goal if the flag-pole were standing, it shall count game for the attacking side.

Rule XXVIII.—Challenges.

Section 1. All challenges must be sent by post, registered, addressed to the Secretary of the Club intended to be challenged.

Sec. 2. Any club receiving a challenge from another club, shall, within one week after its receipt, notify the challenging club of the time and place at which they are prepared to play. The place named shall be at either of their places of residence, or some intermediate place; and the time mentioned shall be within three weeks from the reception of the challenge. All answers to challenges must be sent by post, registered, addressed to the Secretary of the Challenging Club.

Sec. 3. On the day selected, if one club only put in an appearance, it shall be entitled to claim a victory by default. If its opponents refuse to fulfil their engagement, or do not appear upon the ground at the specified

time, the club complying with the terms agreed upon shall be declared the winners of the match.

Sec. 4. If at the time of the reception of a challenge a club has on hand any other regular challenge undisposed of, the time for its acceptance shall be extended within a period not exceeding six weeks ; and should it have more than one regular challenge undisposed of, then within a period not exceeding an additional three weeks for every such challenge. Challenges shall not lapse with the end of the season, but shall continue in force until played off. Challenges so carried over shall date from the 10th May of the new season into which they have been carried.

Sec. 5. A club must accept challenges in the order of their reception. Challenges cannot be sent earlier than the 10th of May, nor later than the 9th of October, inclusive, and no match shall be played earlier than the 24th of May, unless mutually agreed upon. The season shall be from the 24th May to the 31st October inclusive.

Sec. 6. The principle laid down in Sections 1, 2 and 3, of this Rule, shall also govern what are known as "*championships*," unless they are originated under special rules, in which case they will be governed by the latter.

Rule XXIX.—Championship Rules.

Preamble.—In order to create a greater interest in our national game, the Na. Am. La. Association of Canada invite all clubs to compete for the Championships, for which purpose the Association offer a "Championship" Pennant and an "Intermediate Championship" Pennant, the winning clubs to hold the same under the annexed rules, and also subject to rules of the game. The holders of these Pennants to be recognised as "The Champions" and "Intermediate Champions" of Canada.

Section 1. The club holding the "Championship" cannot be compelled to play any club competing therefor more than three times in any one year, and an intervening space of six weeks must elapse between such matches.

Sec. 2. In the event of the holders losing the "Championship," their Secretary shall, within one week, furnish to the Secretary of the winning club, copies, certified by their President, of all challenges for the "Championship" at the time undisposed of, and at the same time give up the Champion Pennant to the winning club.

Sec. 3. The club winning the "Championship" shall take up these undisposed challenges, and treat them as their own, in accordance with and subject to Rule xxviii. (Challenges.)

Sec. 4. Should the Champion Club be challenged by a club belonging to another city or part of the Dominion, half of the net proceeds received from such match shall go toward defraying travelling and hotel expenses only of the visiting team and its captain.

Sec. 5. Should half the net proceeds amount to more than the actual expenses of the visiting team, they shall receive their expenses only—the balance belonging to the Champion Club.

Sec. 6. A statement, signed by the President and Secretary of the Champion Club, given to the competing club, shall be evidence of the amount of net proceeds taken at such match.

Sec. 7. Any club holding either of the Championships, shall furnish security for the sum of $200, to the satisfaction of the President and Sec.-Treasurer of this Association, that the Champion Pennant will be given up to the winning club, upon the adjudication of the game by the Reference, or as provided by section 2 of this Rule.

Sec. 8. Upon the Pennant being surrendered to the winning club, the President and Secretary-Treasurer of this Association shall return or cancel the security given by the losing club.

Sec. 9. No club shall be entitled to hold both Championships, or play for "The Championship" while holding the "Intermediate Championship."

Sec. 10. No club shall be allowed to challenge for "The Championship" until it has proved its right to be considered a first-class club, by defeating the "Intermediate Champion Champions." Should the "Intermediate Champions" challenge for the "Championship," they shall not be allowed to compete again for the "Intermediate Championship" the same season. In such cases the "Intermediate Championship" shall revert to the last holders.

Rule XXX.—Local Championships

Preamble.—In order to create a greater interest in the national game amongst the clubs which cannot compete for the Senior Championship, the N. A. L. A. of Canada propose to create Local Championships, and to offer for competition among the clubs in each district a trophy, which shall be held by the winners under the annexed rules, and shall be emblematic of the Championship of the district in which it is competed for.

Section 1. No club that is not a member in good standing of this Association shall be allowed to compete for or hold these Championships.

Sec. 2. Any club in good standing in this Association shall be eligible to compete for the Local Championsnip of the district in which it is situated, unless clubs holding the Senior or Intermediate Championships,

or first-class clubs which have competed for the Senior Championship during the previous season.

Sec. 3. Any club holding any of these Championships shall furnish security for the sum of $50 to the satisfaction of the President and Secretary-Treasurer of this Association that the trophy will be given up to the winning club upon the adjudication of the game by the Referee, as provided for in section 2 of rule xxix.

Sec. 4. In addition to the above sections all the sections of rule xxviii (challenges), and sections 1, 2, 3, 4, 5, 6, and 8 of rule xxix (championship rule), shall be considered as belonging to this rule.

Rule XXXI.—Amendments.

Section 1. Any amendment or alteration proposed to be made in any part of these laws, shall be made only at the Annual Conventions of the National Association, and by a three-fourths vote of the members present.

Sec. 2. Notice of any proposed alteration or amendment must be made to the Secretary of the Association in writing, and by him communicated to the clubs in its membership, at least two months before it can be voted upon. When notice of alteration or amendment has been given as above, both the notice and amendments thereto may be voted upon at the Annual Convention.

Lessons in Bicycle Riding.

BUY one of the old-fashioned to begin upon; these may be got at a reasonable price, as many have been discarded for the modern ones. They are called "practicers," or, more familiarly, "bone-shakers." In learning to ride, it is advisable to have a competent teacher, who cannot only show what is wanted, but can also put the beginner in the way of doing it himself; but as many may be unable, from distance or other causes, to avail themselves of this kind of assistance, the following instructions are intended for those who are thus thrown upon their own resources. Of course it is necessary to have recourse to a friendly arm, and there may be many cases in which *two* friends are desirous to learn the bicycle, and can give mutual help.

The old-fashioned bicycle is of this construction, that is, of moderate height and the most solid build, and altogether very different from its latest development, with its enormous driving-wheel and general lightness of make. These machines, with comparatively little difference in the height of the wheel, are best for beginners, as, being *low*, the getting on and off is easier and safer, and they are in every way adapted for the purpose; and it is only when tolerable command of this kind is acquired, that the modern large-wheeled bicycle may be adventured with fair prospect of success.

But even with these some discrimination is necessary. In choosing a machine on which to begin practising, we strongly advise the learner to select one of the size suitable to his height, as, if it is too small, his knees will knock against the handles, and if too large, his legs will not be long enough fairly to reach the throw of the crank. We know it is not uncommon to begin with a boy's machine, and on an inclined plan; but the benefit of these is very doubtful, unless you are totally without help, and have no one to lend you a helping hand.

The best guide in measuring oneself for a bicycle to learn on is, we consider, to stand by its side and see that the saddle is in a line with the hips. The point of the saddle should be about six inches from the upright which supports the handles; for if the saddle is placed too far back, you decrease your power over the driving-wheel, especially in ascending a hill.

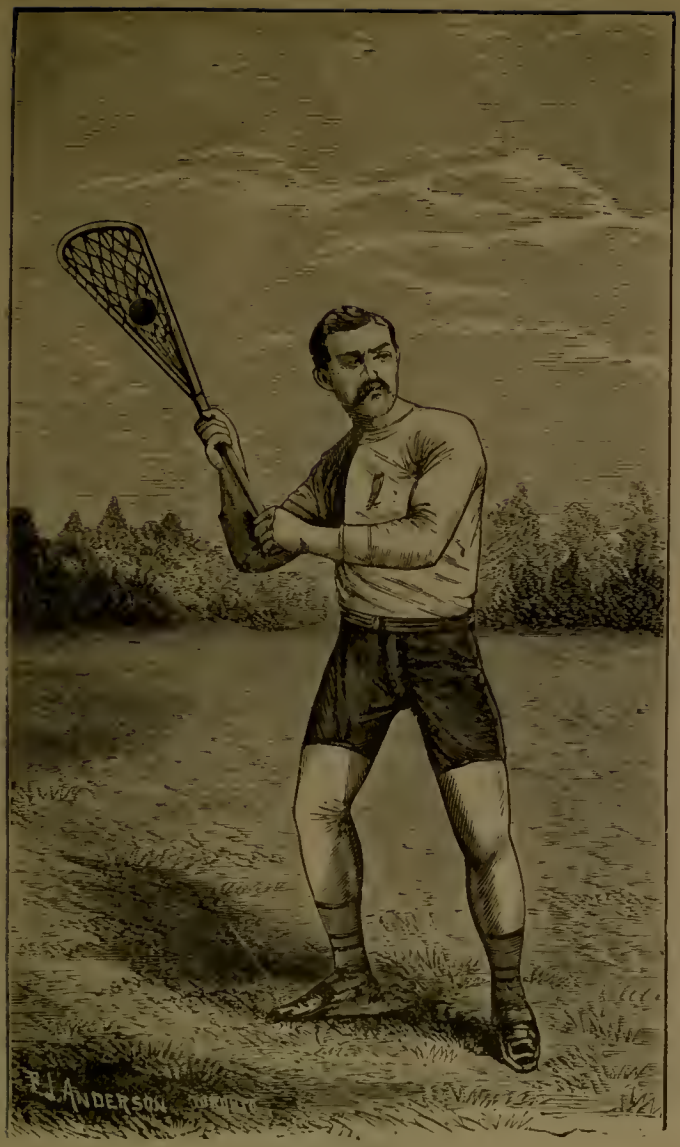
When you have secured a good velocipede, well suited to your size, you will find it useful to practise wheeling it slowly along while holding the handles. While thus leading it about, of course you will soon perceive the fact that the first desideratum is to keep the machine perfectly upright, which is done by turning the handles to the right or left when there is any inclination to deviate from the perpendicular. If inclining to the right, turn the wheel *in the same direction*, and *vice versa*, as it is only the rapidly advancing motion that keeps it upright, on the principle of the boy's hoop, which, the faster it rolls, the better it keeps its perpendicular, and which, when losing its momentum, begins to oscillate, and finally must fall on one side or the other.

Now for the—

FIRST LESSON.

Having become accustomed to the motion of the machine, and well studied its mode of travelling, the next thing is to get the assistant to hold it steady while you get astride, and then let him slowly wheel it along.

Do not attempt at first to put your feet on the treadles, but let them hang down, and simply sit quiet on the saddle, and take hold of the han-



THE OVERSHOT.

MR. J. HOOBIN, OF THE SHAMROCK LACROSSE CLUB.

dles, while the assistant moves you slowly along, with one hand on your arm and the other on the end of the spring.

It is hardly necessary to say that the best place to learn is a large room or gallery, with smooth-boarded floor or flag-stone pavement.

Now, directly you are in motion you will feel quite helpless, and experience a sensation of being run away with, and it will seem as if the machine were trying to throw you off; but all you have to do is to keep the front wheel straight with the back wheel by means of the handles, and the assistant will keep you up and wheel you about for a quarter of an hour or so, taking rest at intervals. When you want to turn move the handle so as to turn the front wheel in the direction required, but avoid turning too quickly, or you will fall on the reverse way.

Observe that in keeping your balance, all is done by the hands guiding the front wheel. Do not attempt to sway your body, and so preserve your balance, but sit upright, and if you feel yourself falling to the left, turn the wheel to the left; that is to say, guide the machine in the direction in which you are falling, and it will bring you up again; but this must be done the *same moment* you feel any inclination from the perpendicular. Do not be violent and turn the wheel too much, or you will overdo it, and cause it to fall the other way.

Practise guiding the machine in this way until you feel yourself able to be left to yourself for a short distance, and then let the assistant give you a push, and leaving his hold, let you run by yourself for a few yards before you incline to fall. Should you feel that you are losing your balance, stretch out the foot on the side on which you incline, so that you may pitch upon it, and thus arrest your fall.

SECOND LESSON.

Having pretty well mastered the balancing and keeping the machine straight, you may now take a further step, and venture to place your feet on the treadles, and you will now find the novel movement of the legs up and down liable to distract your attention from the steering or balancing; but after a few turns you will get familiarized with the motion, and find this difficulty disappear; and it will seem within the bounds of possibility that you may some time or other begin to travel without assistance.

Of course, in this and the former lesson, some will take to it more quickly than others, and the duration of the lessons must depend on the learner himself, and the amount of mechanical aptitude he may be gifted with. Some we have known to take six times as much teaching as others.

THIRD LESSON.

Now, having in the first lesson ridden with the feet hanging down, and in the second with them on the treadles, in the third lesson you should be able to go along for a short distance, working the treadles in the usual way.

Of course, when we speak of the *first* and *second* lessons, we do not mean that after practising each of them *once* you will be able, of necessity, to ride at the *third* attempt; although we have taught some who seemed to take to it all at once: but that these are the progressive steps in learning to ride, and you must practise each of them until tolerably proficient.

When you are sufficiently familiar with the working of the treadles while held by the assistant, it depends entirely on yourself, and the amount of confidence you may possess, to determine the time at which he may let go his hold of you, and you may begin to go alone; but of course for some time it will be advisable for him to walk by your side, to catch you in case of falling. When you have arrived at this stage, you only require practice to make a good rider, and the amount of practice taken is generally a guide to the amount of skill gained.

To Get on and Off.—Having now learned to ride the velocipede without assistance, we will now proceed to getting on and off in a respectable manner, in case you have not a step, which all modern machines are now provided with. The proper way is to vault on and off, which is the easiest way of all, *when you can do it*, but it certainly requires a little courage and skill.

At first, it may be, from want of confidence in yourself, you will jump *at* the machine and knock it over, both you and it coming down. But what is required to be done is, to stand on the *left*-hand side of the bicycle, and throw your *right* leg over the saddle. Stand close to the machine, holding the handles firmly; then run a few steps with it to get a sufficient momentum, and then, leaning your body well over the handles, and throwing as much of your weight as you can upon them, with a slight jump throw your right leg over the saddle.

This may sound formidable, but it is in reality no more than most equestrians do every time they mount, as the height of the bicycle to be cleared is little more than that of the horse's back when the foot is in the stirrup, only the horse is supposed to stand quiet, and therefore you can jump with a kind of swing.

You must be very careful that while running by the side you keep the machine perfectly upright, particularly at the moment of jumping. Per-

haps at first you will vault on, forgetting to keep the machine quite perpendicular, and as an inevitable consequence you will come to the ground again, either on your own side, or, what is worse, you may go right over it, and fall with it on the top of you on the *other* side.

Of course it is much better to have an assistant with you at your first attempts at vaulting, and it is good practice to let him hold the machine steady while you vault on and off as many times as you can manage. You must not forget to put all the weight you can on the handles, and although at first this seems difficult, it is comparatively easy when the knack is acquired.

You will not attempt any vaulting until you can manage the machine pretty well when you are on, up to which time the assistant should help you on and set you straight.

To get on with the help of the *treadle* is a very neat and useful method, but requires considerable more practice than vaulting.

Stand with the left foot on the treadle, and take a slight spring or "beat" from the ground with the right foot, give the machine a good send forward, of course following it yourself, and with a rise bring the right foot over to the saddle. The secret of this movement is that you put as little weight as you can on the treadle, merely following the movement, which has a tendency to lift you, and keep the greater part of your weight on the *handles*.

You may mount the bicycle in another way, and that is by running by its side, and watching the time when one of the treadles is at its lowest, then place your foot upon it, and as it comes up, the momentum thus gained will be sufficient to lift you quite over on to the saddle. In this movement also, as in most others, it is much better to have assistance at first.

To vault off, you have merely to reverse all the movements just described.

Another capital way of alighting from the machine while in motion is to throw the right leg over the handles. You hold the left handle firmly, and raise your right leg over and into the centre of the handles, previously raising your right hand to allow the leg to pass under. Then lifting your *left* hand for the same purpose, you will be able to bring your leg over into a side-sitting posture, and drop to the ground with the same movement.

But at this time pay strict attention to the *steering*, and take care never to let go one hand until you have a firm hold with the other, or you and the whole affair may come to extreme grief.

This we consider one of the easiest methods of getting off, although it looks so difficult.

To Ride Side-saddle.—Riding in a side-sitting position is very simple, but you must first learn the foregoing exercises. First vault on the usual way, and work up to a moderate speed, then throw the right leg over the handles as in the act of getting off, but still retain your seat, and continue working with the left leg only. Now from this position you may practise passing the right leg back again into its original position when sitting across the saddle in the usual way.

To Rest the Legs.—A very useful position is that of stretching out the legs in front when taking long journeys, as it rests the legs, and also, as sometimes you do not require to work the treadle descending an incline, the weight of the machine and yourself being sufficient to continue the desired momentum.

In this position the *break* is generally used; but when putting it on, mind you do not turn the handles with *both* hands at once, but turn with one first and then with the other; as, if the spring should be strong, and you attempt to use both hands in turning it, as a matter of course when you let go to take fresh hold the handles will fly *back*, to your great annoyance.

To Ride without using the Hands.—This is a very pretty and effective performance, but of course it is rather difficult, and requires much practice before attempting it, as the steering must be done with the feet alone, the arms being generally folded.

To accomplish this feat, you must keep your feet firmly *on* the treadles in the upward as well as the downward movement, taking care not to take them off at all, as you will thereby keep entire command of them, which is absolutely necessary, as in fact they are doing *double* work, both propelling and also steering the machine. You will, as you become expert in this feat, acquire a kind of *clinging* hold of the treadles, which you will find very useful, indeed, in ascending a hill when you take to outdoor travelling. Fancy riding of this kind must only be attempted on good surfaces.

Description will not assist you much here, but when you attempt it you will soon find out that when riding without using the hands, every stroke of the foot, either right or left, must be of the same force, as, if you press heavier on one treadle than on the other, the machine will have a tendency to go in that direction; and thus you must be on the watch to counteract it by a little extra pressure on the other treadle, without giving enough to turn the machine in the reverse direction.

This is all a matter of nice judgment, but when you can do it a very good effect is produced, giving spectators the idea of your complete mastery of the bicycle.

But remember that you must be always ready to seize the handles, and resume command if any interruption to your progress presents itself.

To Ride without using Legs or Hands.—As you can now ride without using the hands, let us now proceed to try a performance which, at first sight, will perhaps seem almost impossible, but which is really not much more difficult than going without hands. This is to get the velocipede up to *full* speed, and then lift your feet off the treadles and place them on each side of the rest, and when your legs are up in this way, you will find that you can let go the handles and fold your arms, and thus actually ride without using either *legs* or *hands*.

In progressing thus, the simple fact is that you overcome gravity by motion, and the machine cannot fall until the momentum is lost.

This should only be attempted by an expert rider, who can get up a speed of twelve to fourteen miles per hour, and on a very good surface and with a good run; and, in fact, from this position you may lean back, and lie flat down, your body resting on and along the spring.

At Rest.—We are now come to the last and best, or, we may say, the most useful feat of all, and this is to stop the bicycle and sit quite still upon it.

The best way to commence practising this is to run into a position where you can hold by a railing or a wall, or perhaps the assistant will stand with his shoulder ready for you to take hold of.

Now gradually slacken speed, and when coming nearly to a standstill, turn the front wheel until it makes an angle of 45 deg. with the back wheel, and try all you know to sit perfectly still and upright.

Of course this is a question of balancing, and you will soon find the knack of it. When the machine inclines to the left, slightly press the left treadle; and if it evinces a tendency to lean to the right, press the right treadle; and so on, until, sooner or later you achieve a correct equilibrium, when you may take out your pocket-book and read or even write letters, &c., without difficulty.

Now, we do not think that there is anything further to be said as to learning to ride the bicycle, and we can only express a hope that if you follow the advice and instruction we have been able to give, you will become an expert rider, and be able to begin practising on the "Modern Bicycle."

Choice of a Machine.—And first, as to the choice of a machine. In this case it is imperative to have the very best you can get, as it is utter folly to risk life and limb by using one of inferior make.

In choosing a bicycle, of course the first thing to be considered is the height of wheel, which greatly depends on the length of limb of the rider; as, of course, though two men may be of equal height one may have a longer leg than the other. A good guide is to sit on the machine and let the toe touch the lower treadle without quite straightening the leg, as of course, command must never be lost. For a rider of average height, say 5 feet 8 inches, a machine of 52 to 54 inches we should consider suitable. But, of course, any well-known and reliable maker will furnish you with a machine to suit you.

Having selected your "Modern Bicycle," the first thing you want to accomplish is to be able to mount and dismount. Of course, the saddle being nearly as high as your shoulder, it is impossible to vault on as with the old "practicer." It is therefore necessary to provide a "step," which, in all the modern machines, is fitted on the backbone, or connecting-iron, just above the hinder fork on the left side, at a convenient height. It consists of a small round plate, jagged, to afford a firm grip for the toe when placed upon it.

There are two ways of mounting. One is to start the machine and to run by the left side, and put the left toe upon the step while in motion, throwing the right leg over on to the seat; the other is to stand at the back of the machine, standing on the right leg, with the left toe on the step, and, gently starting, hop with the right leg until you have gained a sufficient impetus to raise yourself on the step, and throw your right leg across the seat.

The first is the best plan as you can run with greater speed, and mount; in fact, the quicker you go the easier to get on. In many cases it is the only practicable plan, as, for instance, on remounting on a slight ascent, where it would be most difficult to get up sufficient speed by the hopping plan, which, moreover, does not present a very graceful appearance.

Now, in the second way of getting on by the step, you hold the handle with the left hand to guide the machine, placing the other on the seat. You can now run it along easily. Your object in having one hand on the seat is, that if both hands are on the handles, you are over-reached, and it is difficult to keep your balance. Now take a few running steps, and when the right foot is on the ground give a hop with *that* foot, and at the same time place the left foot on the step, throwing your right leg over on to the seat. Now, the *hop* is the principal thing to be done, as if,

when running beside the bicycle at a good speed, you were merely to place the left foot on the step without giving a good hop with the other, the right leg would be left behind, and you would be merely what is called "doing the splits."

You will see at once that as the machine is travelling at good speed, you have no *time* to raise one foot after the other (as in walking up stairs), as when you lift up your foot, you are as it were, "in the air," and nothing but a good long running hop will give time to adjust your toe on the step as it is moving. This is, of course, difficult to describe, and we need not say, requires a certain amount of strength and agility, without which no one can expect to become an expert rider.

But in the high racing machines, no one would think of trying to mount without the assistance of a friendly arm, and a stand or stool of suitable height.

Having now mounted the high machine, you will find that the reach of the leg, and the position altogether, is very different from the seat on the "bone-shaker;" but when you get some command, you will find the easy gliding motion much pleasanter, as well as faster. You are now seated much higher, in fact, almost on the top of the wheel: and, instead of using the ball of the foot, you must use your toe; and when the treadle is at the bottom of the throw of the crank, your leg will be almost at its fullest extent, and nearly straight.

Now you must pay a little attention to the process of alighting.

In getting off by the step, all you have to do is to reach back your left foot until you feel the step, and, resting upon the handles, raise yourself up, and throw the right leg over the seat on to the ground.

But we consider getting off by the treadle much the preferable way when you can manage it; but you must be very careful when first trying not to attempt it until the machine is perfectly at rest. Get some one to hold you up, the bicycle being stationary, and practise getting off in the following manner: First, see that the left hand crank is at the bottom, and with your left foot on that treadle practise swinging your right leg backwards and forwards, in order to get used to the movement. Now while in position, throw your right leg with a swing backwards, resting as much as you can of your weight upon the handles, and raise yourself with your right foot into position, continuing your swinging movement until you are off the seat and on the ground.

When you are well able to get off in this way, with the bicycle at rest, you may attempt it when slackening speed to stop. As it is, of course, easier to get off the slower you are going, you must come almost to a

standstill, just keeping way enough to prevent the machine falling over, as, if you attempt it when going at all quickly, you will have to run by its side after you are off, which is a difficult feat for any but a skilful rider.

The great advantage of getting off in this way is that, with practice, you can choose your own time, which is very useful when an obstacle suddenly presents itself, as in turning a corner; and in getting off the other way you are liable to lose time in feeling for the step.

There are different styles of riding, and of course at first you are glad to be able to get along in any way you can; but when you come to have any command over your machine, and have time to think about *style*, you cannot do better than take for your model some graceful rider whose upright and graceful seat gives an impression of quiet power. Very different is the appearance presented by some well-known riders, who although going at really good speed, present a painful appearance, hanging forwards over the handles as if about to topple over, and favouring the beholders with such a variety of facial contortions.

Hints on Training.—It is very difficult to give any rules that will apply to all, as constitutions differ so widely; but the simple rules of regular diet, rest, and exercise will apply to every one, whether they are going, as the saying is, "to race for a man's life," or merely trying to get themselves into the best frame of body to endure moderate exertion. The daily use of the cold bath, or tepid if necessary, cannot be too strongly insisted upon; and also early rising and going to rest; and the avoidance of all rich viands, such as pork, veal, duck, salmon, pastry, etc., etc. Beef, mutton, fowls, soles, and fish of similar kind, should form the principal diet. The severity of the rules of professional training has been much relaxed of late years, and many things, such as vegetables, stimulants in great moderation, etc., are now allowed, which before were rigidly excluded.

In training for any special effort, of course it is necessary to have professional assistance; but with moderate attention to diet and regimen, any one may soon get himself in to good condition, and particularly if he becomes an habitual bicycle-rider.

Swimming.

SWIMMING is the art of keeping the body afloat and propelling it by means of the body and hands. The swimming of man is artificial, but as the specific gravity of the human body is very little greater than that of water, it can be floated with very little difficulty.

Every boy should be taught to swim, and if he reads the following pages and abides by the instructions, he can easily teach himself.

The first care of the intending swimmer is, of course, to find a proper piece of water in which to learn his first lessons. The very best water that can be found is that of the sea, on account of its saltness and bitterness, whereby two great advantages are obtained.

The first advantage is, that, on account of the salt and other substances which are dissolved in it, the sea-water is so much heavier than fresh that it gives more support to the body, and enables the beginner to float much sooner than he can expect to do in fresh water.

The other advantage is, that the taste of the sea-water is so nauseous that the learner takes very good care to keep his lips tightly shut, and so does not commit the common error of opening the mouth, which is fatal to all swimming, and is sure to dishearken a beginner by letting water get down his throat and half-choke him.

As to place, there is nothing better than a sloping sandy shore, where the tide is not very strong. In some places the tide runs with such a force, that if the beginner is taken off his legs he will be carried away, or, at least, that he will have great difficulty in regaining his feet.

We strongly recommend him to walk over the spot at low water, and see whether there are any stones, sticks, rocks, or holes and if so, to remove all the movable impediments and mark the position of the others.

Take a special care of the holes, for there is nothing so treacherous. A hole of some six or seven inches in depth and a yard in diameter, looks so insignificant when the water is out that few persons would take any notice of it; but, when a novice is in the water, these few inches may just make the difference between safety and death.

On sandy shores the most fertile source of holes is to be found in large stones. They sink rather deeply into the sand and form miniature rocks, round which the water courses as the tides ebb and flow, thus cutting a channel completely round the stone. Even when the stone is removed, the hole will remain unfilled throughout several tides.

The next best place for learning to swim, is a river with a fine sandy bed, clear water, and no weeds.

When such a spot has been found, the next care is to examine the bed of the river, and to remove very carefully everything that might hurt the feet. If bushes should grow on the banks, look out carefully for broken scraps of boughs, which fall into the stream, become saturated with water, sink to the bottom, and become fixed to one of the points upwards.

If human habitations should be near, beware of broken glass and crockery; fragments of which are generally flung into the river, and will inflict most dangerous wounds if trodden on. If the bed of the stream should be in the least muddy, look out for mussels, which lie imbedded almost to their sharp edges, that project upwards and cut the feet nearly as badly as broken glass.

Failing sea and river, a pond or canal is the only resource, and furnishes the very worst kind of water. The bed of most ponds is studded with all kinds of cutting and piercing objects, which are thrown in by careless boys, and remain where they fell. Then, the bottom is almost invariably muddy, and the water is seldom clean. Still, bad as is a pond, it is better than nothing, and the intending swimmer may console himself with the reflection that he is doing his duty, and with the prospect of swimming in the sea some time or other.

Of course the large public baths possess some of the drawbacks of ponds; but they have, at all events, the advantage of a regulated depth, a firm bank, and no mud.

As the very essence of swimming lies in confidence, it is always better for the learner to feel secure that he can leave the water whenever he likes. Therefore, let him take a light rope of tolerable length, tie one end to some firm object on the bank, and let the rest of the rope lie in the water. "Manilla" is the best kind of rope for this purpose, because it is so light that it floats on the surface instead of sinking, as is the case with an ordinary hempen rope.

If there is only sand on the shore, the rope can be moored quite firmly by tying it to the middle of a stout stick, burying the stick a foot or so in the sand, and filling up the trench. You may pull till you break the rope,

but you will never pull the stick out of its place. If you are *very* nervous, tie two sticks in the shape of a cross and bury them in like manner.

The rope need not be a large one, as it will not have to sustain the whole weight of your body, and it will be found that a cord as thick as an ordinary washing-line will answer every purpose.

On the side of a stream or pond, tie the rope to a tree or hammer a stake in the ground. A stake eighteen inches in length, and as thick as an ordinary broomstick is quite large enough. Hammer it rather more than two-thirds into the ground, and let it lean boldly away from the water's edge. The best way of fixing the rope to it is by the "clove hitch."

Now, having your rope in your hand, go quietly into the water *backwards*, keeping your face towards the bank. As soon as you are fairly in the water, duck completely beneath the surface. Be sure that you really do go fairly under the water, for there is nothing more deceptive than the feel of the water to a novice. He dips his head, as he fancies, at least a foot beneath the surface; he feels the water in his nose, he hears it in his ears, and thinks he is almost at the bottom, when, in reality, the back of his head is quite dry.

The best way of "ducking" easily is to put the left hand on the back of the head, hold to the rope with the right hand, and then duck until the left hand is well under water.

The learner should next accustom himself to the new element by moving about as much as possible, walking as far as the rope will allow him, and jumping up and down so as to learn by experience the buoyancy of the water.

Perhaps the first day may be occupied by this preliminary process, and on the second visit the real business may begin.

In swimming, as in most other pursuits, a good beginning is invaluable.

Let the learner bestow a little care on the preliminaries, and he will have no bad habits to unteach himself afterwards. It is quite as easy to learn a good style at first as a bad style, although the novice may just at the beginning fancy that he could do better by following his own devices.

The first great object is to feel a perfect confidence in the sustaining power of the water, and, according to our ideas, the best method of doing so is by learning to float on the back.

FLOATING ON THE BACK.

Take care that the cord is within easy reach, so that it may be grasped in a moment, should the novice become nervous, as he is rather apt to do

just at first. Take it in both hands, and lay yourself very gently in the water, arching the spine backwards as much as possible, and keeping the legs and knees perfectly straight and stiff.

Now press the head as far back as possibly can be done, and try to force the back of the head between the shoulder-blades. You can practise this attitude at home, by lying on two chairs.

When you have thus lain in the water you will find that you are almost entirely upheld by its sustaining power, and that only a very little weight is sustained by the rope. On reflection you will also discern that the only weight which pulls on the rope is that of your hands and arms, which are out of the water, and which, therefore, act as dead weight.

Indeed, you might just as well lay several iron weights of a pound each upon your body, for the hands and arms are much heavier than we generally fancy. Just break an arm or a leg, and you will find out what heavy articles they are.

Now let your arms sink gradually into the water, and you will see that exactly in proportion as they sink, so much weight is taken off the rope; and if you have only courage to put them entirely under water, and to loose the rope, your body will be supported by the water alone.

SWIMMING ON THE BACK, HEAD FIRST.

There are many modes of swimming on the back, head first; some in which the hands are the moving power, others in which the force is derived from the legs, and some in which the legs and arms are both exerted.

To practise one of these methods—viz., that commonly called floating—you should throw your head gently back, as before, bringing your feet to the surface; let your arms lie in the water close to your sides, using the hands in the same manner as when sculling, with a swift pushing motion of the palms towards the feet, returning edgeways, thumbs first, by bending the arms; and pushing again towards the feet by straightening the arms close to the sides. This produces a very rapid progress through the water, and may be continued for some time.

Another method is as follows:—Throw yourself round on your back without stopping (which may be done with a swing of the body, while swimming in the first described method), and you will retain part of the impetus already acquired. Then throw both hands out of the water, as far as you can reach, in the direction you wish to proceed, entering again edgeways beyond your head, and describe a segment of a circle in the

water, having the shoulders for a centre. The hands, on appearing again on the surface below the hips, should pass immediately through the air for another stroke. This mode is very serviceable when taken with cramp, or symptoms of cramp, as it removes the stress entirely off the muscles of the leg. It may be gracefully varied by using the right and left hands alternately.

For the practice of a third method the hands and arms are to be used as in the last, but the progress should be aided by the lower limbs striking out with vigour, after having been drawn up to the body by the stroke made with the arms. The kick should be made as the hands pass through the air. This is a very quick manner of swimming, and is most commonly resorted to for relief when swimming in a match.

For another method, lie on your back with your arms folded, or with your hands passed over your shoulders beneath your neck, or floating quietly by your side, drawing up your legs towards the chest as high as possible, and then striking them backwards with vigour, which will cause you to make considerable progress through the water without using the arms at all. When you draw up your feet the movement is against the surface, where there is little resistance, but, when you strike them out, the force is applied in a downward direction, where the resistance is greatest. The foregoing method is useful when your arms are tired, or you have something to carry or tow after you, the hands being perfectly free.

Steering the course is easily managed by means of the legs. If the left leg is allowed to remain still, and the right leg is used, the body is driven to the left, and *vice versa* when the left leg is used and the right is kept quiet. The young swimmer must remember that when he brings his legs together they must be kept quite straight and the knees stiff. The toes should also be pointed, so as to offer no resistance to the water.

Swimming on the back is a most useful branch of the art, as it requires comparatively little exertion and serves to rest the arms when they are tired with the ordinary mode of swimming. All swimmers who have to traverse a considerable distance always turn occasionally on the back. They even in this position allow the arms to lie by the side until they are completely rested, while at the same time the body is gently sent through the water by the legs.

Let swimming on the back be perfectly learned, and practised continually, so that the young swimmer may always feel secure of himself when he is in that position.

The feet should be kept about twelve or fourteen inches below the surface of the water, as, if they are kept too high, the stroke is apt to drive the upper part of the head and eyes under the water.

It must always be remarked that it is impossible to arch the spine too much, or to press the head too far between the shoulders.

SWIMMING ON THE CHEST.

We now come to swimming on the chest, which is the mode adopted by most persons, and which, together with swimming on the back, will enable the learner to perform almost any aquatic feat.

In order to begin with confidence, walk into the water until it is almost as high as the chest, and then turn towards the land, so that every movement may carry you from the deeper to the shallower water. Next place your hands in front of the chest, the fingers stiff and pressed together, and the thumb held tightly against the forefinger. Do not press the palms together, as too many books enjoin, but hold the hands with the thumbs together, the palms downwards and the backs upwards.

Now lean gently forward in the water, pushing your hands out before you until the arms are quite straight, and just before your feet leave the bottom give a little push forwards. You will now propel yourself a foot or two towards the land. Try how long you can float, and then gently drop the feet to the ground. Be careful to keep the head well back and the spine arched.

Repeat this seven or eight times, until you have gained confidence that the water will support you for a few seconds.

The accompanying illustration shows the proper attitude.

Now go back to the spot whence you started, and try to make a stroke. Lay yourself on the water as before, but when the feet leave the bottom draw them up close to the body, and then kick them out quickly. When they have reached their full extent, press them together firmly, keeping them quite straight and the toes pointed.

This movement will drive you onwards for a short distance, and when you feel that you are likely to sink, drop the feet as before. Start again and make another stroke, and so on until the water is too shallow.

At first you will hardly gain more than an inch or two at each stroke; but after a little practice you will gain more and more until you can advance three or four feet without putting the legs to the ground. It is a good plan to start always from the same spot, and to try in how few strokes you can reach the land. There is a great interest in having some

definite object in view, and one gets quite excited in trying to reduce the number of strokes.

The action of the legs may be seen in the illustration.

The next point is the movement of the arms.

In reality the arms are more valuable in swimming than the legs, and for this simple reason, any one who has the use of his limbs at all is obliged to use his legs daily, and that to a considerable extent. However sedentary he may be, he must walk up and down stairs twice at least in the day. He must walk from one room to another. He must get into and out of his carriage, and walk a few paces to his office. And in all these little walks his legs have to carry the weight of his body, which, to set it at the least figure, weighs from seventy to ninety pounds.

THE SIDE-STROKE.

There is no stroke that enables the swimmer to last so long as this does, and for this reason: instead of employing both arms and legs simultaneously in the same manner, the side-stroke employs them simultaneously, but in different manners; so that when the swimmer is tired of exercising one side he can just turn over and proceed with the other, the change of action resting the limbs almost as much as actual repose would do.

The side-stroke is thus managed: the swimmer lies on his right side, stretching his right arm out as far as he can reach, keeping the fingers of the right hand quite straight and the hand itself held edgewise, so as to cut the water like a shark's fin. The left hand is placed across the chest, with the back against the right breast, and the swimmer is then ready to begin.

He commences by making the usual stroke with his legs, and the right leg, being undermost, doing the greatest share of the work. Before the impetus gained by the stroke is quite expended, the right arm is brought round with a broad sweep, until the palm of the hand almost touches the right thigh. At the same moment, the left hand makes a similar sweep, but is carried backwards as far as it can go.

The reader will see that the hands act directly upon the water like the blades of a pair of oars, and do not waste any of their power by oblique action.

In ordinary swimming we seldom use the left arm, but allow it to hang quietly in the water, so that it may be perfectly ready for work when

wanted. Then, after some little time, we turn round, swim on the other side, and give the left arm its fair share of labour.

There is a modification of swimming on the side, which is sometimes called THRUSTING, and sometimes the INDIAN STROKE, because the North American Indians generally employ it.

Drowning.

I.—PRELIMINARY RULES.

IN cases of apparent death, either from drowning or other suffocation, send immediately for medical assistance, blankets, and dry clothing, but proceed to treat the patient *instantly* on the spot, in the open air, with the face downward, whether on shore or afloat; exposing the face, neck, and chest to the wind, except in severe weather, and removing all tight clothing from the neck and chest, especially the braces.

The points to be aimed at are; first and *immediately* the *restoration of breathing*; and secondly, after breathing is restored, the *promotion of warmth and circulation.*

The efforts to *restore breathing* must be commenced immediately and energetically and persevered in for one or two hours, or until that a medical man has pronounced life extinct.

Efforts to promote *warmth and circulation*, beyond removing the wet clothes and drying the skin, must not be made until the first appearance of natural breathing. For if circulation of the blood be induced before breathing has recommenced, the restoration to life will be endangered.

II.—TREATMENT TO RESTORE BREATHING, ACCORDING TO DR. MARSHALL HALL'S METHOD.

1.—*To Clear the Throat.*

Place the patient on the floor or ground with the face downwards, and one of the arms under the forehead, in which position all fluids will more

readily escape by the mouth, and the tongue itself will fall forward, leaving the entrance into the windpipe free. Assist this operation by wiping and cleansing the mouth.

If satisfactory breathing commences, use the treatment described below to promote warmth.

If there be only slight breathing, or no breathing, or if the breathing fail, then—

2.—*To excite breathing.*

Turn the patient well and instantly on the side, supporting the head, and excite the nostrils with snuff, hartshorn, and smelling salts; or tickle the throat with a feather, &c., if they are at hand. Rub the chest and face warm, and dash cold water or cold and hot water alternately, on them.

If there be no success, lose not a moment, but instantly—

3.—*To imitate breathing.*

Replace the patient on the face, raising and supporting the chest well on a folded coat or other article of dress.

Turn the body very gently on the side and a little beyond and then briskly on the face, back again; repeating these measures cautiously, efficiently, and perseveringly about fifteen times in the minute, or once every four or five seconds, occasionally varying the side.

By placing the patient on the chest, the weight of the body forces the air out; when turned on the side, this pressure is removed, and air enters the chest.

On each occasion that the body is replaced on the face make uniform but efficient pressure with brisk movement, on the back between and below the shoulder blades or bones on each side, removing the pressure immediately before turning the body on the side.

During the whole of the operations let one person attend solely to the movements of the head, and of the arm placed under it.

The result is respiration or natural breathing; and, if not too late, life.

Whilst the above operations are being proceeded with, dry the hands and feet; and as soon as dry clothing or blankets can be procured, strip the body, and cover or gradually reclothe it, but taking care not to interfere with the efforts to restore breathing.

III.—Treatment to Restore Breathing, According to Dr. Silvester's Method.

Instead of these proceedings, or should these efforts not prove success-

ful in the course of from two to five minutes, proceed to imitate breathing by Dr. Silvester's method, as follows :—

1.—*Patient's position.*

Place the patient on the back of a flat surface, inclined a little upwards, from the feet; raise and support the head and shoulders on a small firm cushion, or folded article of dress placed under the shoulder blades.

2.—*To effect a free entrance of air into the windpipe.*

Cleanse the mouth and nostrils, draw forward the patient's tongue, and keep it projecting beyond the lips; an elastic band over the tongue and under the chin will answer this purpose, or a piece of string or tape may be tied round them by raising the lower jaw, the teeth may be made to retain the tongue in that position. Remove all tight clothing from about the neck and chest, especially the braces.

3.—*To imitate the movements of breathing.*

Standing at the patient's head, grasp the arms just above the elbows, and draw the arms gently and steadily upwards above the head, and *keep them stretched* upwards for two seconds. (*By this means air is drawn into the lungs.*) Then turn down the patient's arms and press them gently and firmly for two seconds against the sides of the chest. (*By this means air is pressed out of the lungs.* Pressure on the breast-bone will aid this.)

Repeat these measures alternately, deliberately, and perseveringly, about fifteen times in a minute, until a spontaneous effort to respire is perceived; immediately upon which cease to imitate the movements of breathing and proceed to *induce circulation and warmth.*

Should a warm bath be procurable, the body may be placed in it up to the neck, continuing to imitate the movements of breathing. Raise the body in twenty seconds in a sitting position, and dash cold water against the chest and face, and pass ammonia under the nose. The patient should not be kept in the warm bath longer than five or six minutes.

4.—*To excite inspiration.*

During the employment of the above method excite the nostrils with snuff or smelling salts, or tickle the throat with a feather. Rub the chest and face briskly, and dash cold and hot water alternately on them.

The above directions are chiefly Dr. H. R. Silvester's method of restoring the apparently dead or drowned, and have been approved by the Royal Medical and Chirurgical Society.

IV.—Treatment after Natural Breathing has been Restored.

1.—*To promote warmth and circulation.*

Wrap the patient in dry blankets, commence rubbing the limbs upwards, with firm grasping pressure and energy, using handkerchiefs, flannels, &c. (By this means the blood is propelled along the veins towards the heart.)

The friction must be continued under the blanket or over the dry clothing.

1. Promote the warmth of the body by the application of hot flannels, bottles, or bladders of hot water, heated bricks, &c., to the pit of the stomach, the arm-pits, between the thighs, and to the soles of the feet Warm clothing may generally be obtained from bystanders.

2. If the patient has been carried to a house after respiration has been restored, be careful to let the air play freely about the room.

3. On the restoration of life, when the power of swallowing has returned, a tablespoonful of warm water, small quantities of wine, warm brandy and water, or coffee, should be administered. The patient should be kept in bed, and a disposition to sleep encouraged. During reaction, large mustard plasters to the chest below the shoulders will greatly relieve the distressed breathing.

V.—General Observations.

The above treatment should be continued for some hours, as it is an erroneous opinion that persons are irrecoverable because life does not soon make its appearance, persons having been restored after persevering for many hours.

VI.—Appearances which Generally Indicate Death from Drowning.

Breathing and the heart's action cease entirely; the eyelids are generally half closed; the pupils dilated; the jaws clenched; the fingers semi-contracted; the tongue approaches to the under edges of the lips, and these, as well as the nostrils, are covered with a frothy mucus. Coldness and pallor of surface increase.

VII.—Cautions.

1. Prevent unnecessary crowding of persons round the body; especially if in an apartment.

2. Avoid rough usage, and do not allow the body to remain on the back unless the tongue is secured.

3. Under no circumstances hold the body up by the feet.

4. On no account place the body in a warm bath, unless under medical direction, and even then it should only be employed as a momentary excitant.

Conundrums.

1. Where was Humboldt going when he was thirty-nine years old?
2. Which is the most ancient of the trees?
3. Which are the most seasonable clothes?
4. Why are lawyers and doctors safe people by whom to take example?
5. What injury did the Lavinia of Thomson's "Seasons" do to young Palemon?
6. Why are wooden ships (as compared with ironclads) of the female sex?
7. At what time of life may a man be said to belong to the vegetable kingdom?
8. Which are the lightest men—Scotchmen, Irishmen, or Englishmen?
9. Which are the two hottest letters of the alphabet?
10. Why is cutting off an elephant's head widely different from cutting off any other head?
11. Who is the man who carries everything before him?
12. Which are the two kings that reign in America?
13. When may a man's pocket be empty and yet have something in it?
14. Why is a clock the most modest piece of furniture?
15. Why is U the gayest letter in the alphabet?
16. Why are corn and potatoes like Chinese idols?
17. Which is the merriest sauce?
18. Why is a cat going up three pairs of stairs like a high hill?
19. Why is a lead-pencil like a perverse child?
20. Why is a horse like the letter O?
21. Why are penmakers inciters to wrongdoing?
22. Why should we never sleep in a railway carriage?
23. When is a boat like a heap of snow?
24. What 'bus has found room for the greatest number of people?
25. Who is the first little boy mentioned by a slang word in the History of England?
26. Why is Macassar oil like a chief of the Fenians?
27. Why is a nabob like a beggar?
28. What sort of day would be good for running for a cup?
29. What is the difference between a spendthrift and a feather bed?
30. Is there any bird that can sing the "Lays of Ancient Rome?"
31. What have you to expect at a hotel?
32. What comes after cheese?

33. When does a man sit down to a melancholy dessert?
34. What notes compose the most favourite tunes, and how many tunes do they compose?
35. When may a man be said to breakfast before he gets up?
36. Why is a hotel waiter like a race-horse?
37. When is the soup likely to run out of the saucepan?
38. What is that word of five letters, of which, when you take away two, only one remains?
39. When are volunteers not volunteers?
40. Why is the letter B like a fire?
41. Why is the letter R a profitable letter?
42. What word may be pronounced quicker by adding a syllable to it?
43. What is the difference between a dairy-maid and a swallow?
44. Which animal has the most property to carry with him when he travels, and which two have the least?
45. How many sticks go to the building of a crow's nest?
46. Why was Robinson Crusoe not alone on his desert island?
47. Why are there no eggs in St. Domingo?
48. What is invisible blue?
49. Which is the most wonderful animal in the farm-yard?
50. Which peer wears the largest hat?
51. When does the beer become eatable?
52. Why is a patent safety Hansom cab a dangerous carriage to drive in?
53. Why are bakers very self-denying people?
54. Why is whispering in company like a forged bank-note?
55. Which constellation resembles an empty fire-place?
56. What is the last remedy for a smoky chimney?
57. What relation is that child to its father who is not its father's own son?
58. When does a cow become real estate?
59. Why are dissenters like spiders?
60. Why did Marcus Curtis leap into the gulf in Rome?
61. Why is a soldier like a vine?
62. Which is heavier, a half or a full moon?
63. When should you avoid the edge of the river?
64. Why must a fisherman be very wealthy?
65. If the fender and fire-irons cost three pounds, what will a ton of coals come to?
66. Why are the fourteenth and fifteenth letters of the alphabet of more importance than the others?
67. What is the way to make your coat last?
68. Why is an alligator the most deceitful of animals?
69. Why is it impossible that there should be a best horse on a race-course?
70. Why are fowls the most economical creatures that farmers keep?
71. When may a ship be said to be in love?
72. What relation is the door-mat to the scraper?
73. What vegetable most resembles little Fanny's tongue?
74. Why is gooseberry jam like counterfeit money?
75. What is that which has never been felt, seen, nor heard—never existed and still has a name?
76. Why is a congreve-box without matches, superior to all other boxes?
77. Why is a postman in danger of losing his way?
78. What is that which comes with a coach, goes with a coach, is of no use to the coach, and yet the coach can't go without it?
79. What three letters give the name of a famous Roman general?
80. Why would it affront an owl to mistake him for a pheasant?
81. If your uncle's sister is not your aunt, what relation does she bear to you?
82. Of what profession is every child?
83. Why is the letter *i* in Cicero like Arabia?
84. Why is troyweight like an unconscientious person?
85. Why is chloroform like Mendelssohn?
86. When is a sailor not a sailor?
87. Why does a duck put its head under water?
88. What wild animals may be correctly shut up in the same enclosure?
89. What makes a pair of boots?
90. Can you tell me why
A hypocrite sly
Is the man who best knows
Upon how many toes
A pussy-cat goes?
91. What tree is of the greatest importance in history?
92. Which is the most moral food—cake or wine?

93. Why is a good resolution like a fainting lady at a ball?
94. Why is a carpenter like a languid dandy?
95. When does a monkey weigh least?
96. What is the last blow a defeated ship gives in battle?
97. What had better be done when there is a great rent on the farm?
98. Why is an uncomfortable seat like comfort!
99. What two letters do boys delight in, to the annoyance of their elders?
100. What single word would you put down for £40 borrowed from you?
101. When is a river like a young lady's letter?
102. Why is the Bank of England like a thrush?
103. Why would a pelican make a good lawyer?
104. Describe a suit of old clothes in two letters.
105. Which is the proper newspaper for invalids?
106. What American poet may be considered equal to three-fifths of the poets, ancient and modern.
107. What precious stone is like the entrance to a field.
108. When is a man like frozen rain?
109. Which of the stars should be subject to the game-laws?
110. What garden crop would save draining?
111. When does a cook break the game-laws?
112. Spell an interrogation with one letter.
113. When is a bill not a bill?
114. What pen ought never to be used for writing?
115. When is a subject beneath one's notice?
116. Why is a loyal gentleman like a miser?
117. Why is the letter W like the Queen's ladies?
118. What tune makes everybody glad?
119. Why are Dover cliffs like the letter D?
120. When is a straight field not a straight field?
121. Why is a fish-hook like the letter F?
122. What letter is that which is in-visible, but never out of sight?
123. How would you express in two letters that you were twice the bulk of your companions?
124. Why is attar of roses never moved without orders?
125. If the Greeks had pushed Pan into the Bay of Salamis, what would he have been when he came out?
126. When is a lady's arm not a lady's arm?
127. What is that which occurs once in a minute, twice in a moment, and not once in a hundred years?
128. What is an old lady in the middle of a river like?
129. When is a fish above its station?
130. When do we witness cannibalism in England?
131. When is a boy not a boy?
132. When is a piece of wood like a queen?
133. When is a skein of thread like the root of an oak?
134. What is that which has a mouth but never speaks, and a bed but never sleeps in it?
135. What word contains all the vowels in their proper order?
136. What letter used to be distributed at tournaments?
137. Why is a carriage going down a steep hill like St. George?
138. Why is I the happiest of all the vowels.
139. Why should you never employ a tailor who does not understand his trade?
140. Why are your eyes like friends separated by distant climes?
141. Why is a bad-tempered horse the best hunter?
142. What sort of a face does an auctioneer like best?
143. Why is the letter F like a cow's tail?
144. What is the difference between a husbandman and a sempstress?
145. What is it of which we have two every year, two every week, and two every day?
146. How does a boy look if you hurt him?
147. What medicine ought to be given to misers?
148. Why do British soldiers never run away?
149. What weight or measure would no competitor wish to be?
150. What part of a railway carriage resembles Fanny when she is sleepy?
151. Why is the letter R most important to young people?
152. Why is a healthy boy like England?
153. When is a book like a prisoner in the States of Barbary?

154. What wind would a hungry sailor prefer?
155. On which side of a pitcher is the handle?
156. When may a chair be said to dislike you?
157. What is that which divides by uniting and unites by dividing?
158. Why are young children like castles in the air?
159. What is higher and handsomer when the head is off?
160. Why is a proud girl like a music-book?
161. Why is a short negro like a white man?
162. Why are bells the most obedient of inanimate things?
163. Why are boxes at a theatre the saddest places of public amusement.
164. Why is the most discontented man the most easily satisfied?
165. Why are ripe potatoes in the ground like thieves?
166. Why is it unjust to blame cabmen for cheating us?
167. When is a thief like a reporter?
168. When is the French nation like a baby?
169. What does a lamp-post become when the lamp is removed?
170. What things increase the more you contract them?
171. Why is a mother who spoils her children like a person building castles in the air?
172. When you listen to your little brother's drum, why are you like a just judge?
173. When is a tourist in Ireland like a donkey?
174. Who always sits with his hat on before the Queen?
175. Why is a pig in the drawing-room like a house on fire?
176. When is a river not a river?
177. What trade never turns to the left?
178. What trade is more than full?
179. Why is electricity like the police when they are wanted?
180. When is a borough like a ship?
181. Why are guns like trees?
182. What town is drawn more frequently than any other?
183. Who was the first postman?
184. Why is little Prince Albert Victor like the two things in which children most rejoice?
185. What is the key-note to good breeding?
186. What is the difference between a sailor and a soldier?
187. Why is a rook like a farmer?
188. Why is anger like a potato?
189. Why does pedestrianism help arithmetic?
190. What trees are those which are the same after being burned as they were before!
191. What is the best thing to do in a hurry!
192. Why are cobblers like Sir William Ferguson?
193. Which is the ugliest hood ever worn?
194. What nation will always overcome in the end?
195. When is butter like Irish children?
196. On what tree would an ode be written which would name an Irish M. P.?
197. What have you now before you which would give you a company, a veiled lady, and a noisy toy?
198. What is the difference between Kossuth and a half-starved oyster?
199. If Neptune lost his dominions, what would he say?
200. Why is a Dorcas Society like an assembly of dishonest people?
201. It went before Queen Mary—poor thing! It followed King William to the end—poor man!
202. Why is the letter A like noon?
203. Why is a five pound note more than five sovereigns?
204. When was the greatest destruction of poultry?
205. In what respects were the governments of Algiers and Malta as different as light from darkness?
206. When is a young lady's cheek not a cheek?
207. When is her nose not a nose?
208. When is a boy not a boy?
209. When is a ship foolishly in love?
210. When is a ship like Harry's mamma?
211. What part of London would a horse most like to live in?
212. What do you put before nine to make it three less by the addition?
213. Why should you never attempt to catch the 12.50 train?
214. Who is the best pew-opener?
215. Given A B C, to find Q.
216. Which is the easier profession, a doctor's or a clergyman's?

217. What word of four syllables represents Sin riding on a little animal?
218. If I were in the sun and you out of it, what would the sun become?
219. Why is a tallow chandler the most unfortunate of all mankind?
220. What is it that walks with its head downwards?
221. Why are the hours from one to twelve like good Christians?
222. Why is a hen walking across the road like a conspiracy?
223. On which side of the church is the yew-tree planted?
224. Why cannot Napoleon III. insure his life?
225. How many wives does the Prayer-book allow?
226. Why have ducks no hereafter?
227. Why is a dog with a lame leg like a boy at arithmetic?
228. Why is an engine-driver like a school master?
229. What will a leaden bullet become in water?
230. Why is a person of short stature like an almanack?
231. Why is the smoke of tobacco like Port wine?
232. Why is a photograph like a member of Parliament?
233. Why is London Bridge like merit?
234. That which every one requires, that which every one gives, that which every one asks, and that which very few take.

ANSWERS TO CONUNDRUMS.

1. Into his fortieth year.
2. The elder tree.
3. Pepper and salt.
4. Because they practise their professions.
5. She pulled his ears and trod on his corn.
6. Because they are the weaker vessels.
7. When long experience has made him sage.
8. Englishmen. In Scotland there are men of Ayr (air), in Ireland men of Cork; but in England are *lighter-men*.
9. K. N. (Cayenne).
10. Because when you separate the head from the body, you don't take it from the trunk.
11. The footman.
12. Smo-king and soa-king.
13. When it has a hole in it.
14. Because it covers its face with its hands, and runs down its own works.
15. Because it is always in fun.
16. Because they have ears which can't hear, eyes which cannot see.
17. Caper sauce.
18. Because she's a-mountain!
19. It never does right (write) of itself.
20. Because Gee (G) makes it go?
21. Because they make people steel (steal) pens, and say they do write (right).
22. Because the train always runs over sleepers.
23. When it is a-drift.
24. Columbus.
25. Chap. I.
26. Because it is a head (s) centre.
27. He is an India gent (indigent).
28. A muggy day.
29. One is hard up and the other soft down.
30. Yes; they are Macaw-lays (Macaulays).
31. Inn-attention.
32. Mouse.
33. When he sits down to wine (whine) and pine.
34. Bank notes, and they make (four) for tunes.
35. When he takes a roll in bed.
36. Because he runs for cups, plates, and stakes (steaks).
37. When there's a leek (leak) in it.
38. Stone.
39. When they are mustered (mustard).
40. It makes oil, *boil*.
41. Because it makes ice into *rice*.
42. Quick.
43. One skims milk and the other skims water.
44. The elephant the most, because he carries a trunk. The fox and cock the least, as they have only a brush and comb between them.
45. None; they are all carried to it.

46. Because there was a heavy swell on the beach, and a little cove running up into the land. (This riddle is a slang one.)
47. Because they banished the whites and cast off their yoke (yolk).
48. A policeman when he is wanted.
49. A pig, because he is killed first and cured afterwards.
50. The one who has the largest head.
51. When it is a little tart.
52. Because the cabman always drives over your head.
53. Because they sell what they knead (need) themselves.
54. Because it is uttered but not allowed (aloud).
55. The Great Bear (grate bare).
56. Putting the fire out.
57. His daughter.
58. When she is turned into a field.
59. Because they are in-sects.
60. Because he thought it a good opening for a young man.
61. Because he is 'listed, trained, has ten drills (tendrils), and shoots.
62. The half, because the full moon is as light again.
63. When the hedges are shooting and the bull-rushes out.
64. Because his is all net profit.
65. Ashes.
66. Because we cannot get on (O N) well without them.
67. To make your waistcoat first.
68. Because he shows an open countenance in the act of taking you in.
69. Because there's always a better.
70. Because for every grain they eat they give a peck.
71. When she wishes for a mate.
72. A step-father (farther).
73. A scarlet runner.
74. Because it is not current (currant).
75. Nothing.
76. It is matchless.
77. Because he is guided by the directions of strangers.
78. A noise.
79. C P O (Scipio).
80. It would be making game of him.
81. She is your mother.
82. A player.
83. It is between two seas (C's).
84. It has no scruples.
85. Because it is one of the great composers of modern times.
86. When he is a-loft.
87. For diver's reasons.
88. Sixteen ounces in one pound.
89. Two boots.
90. A hypocrite neat
Can best count her feet (counterfeit);
And so, I suppose,
Can best count her toes.
91. The date.
92. Cake, because it is only sometimes tipsy, while wine is often drunk.
93. Because it ought to be carried out.
94. Because he often feels a great deal bored (board).
95. When he is within the pound.
96. Striking her own flag.
97. It had better be sown (sewn).
98. Because it is devoid of ease (E's)—(there are no E's in the word *comfort*).
99. Two T's (to tease).
100. XL lent (excellent).
101. When it is crossed.
102. Because it often changes its notes.
103. He knows how to stretch his bill.
104. C D (seedy).
105. The "Weekly (weakly) News."
106. Poe.
107. A-gate.
108. When he is hale (hail).
109. Shooting stars.
110. Leeks.
111. When she poaches eggs.
112. Y (why?).
113. When it is due (dew).
114. A sheep-pen.
115. When it is under consideration.
116. He knows the value of his sovereign.
117. It is always in waiting.
118. For-tune.
119. They are next the sea (C).
120. When it is a rye (awry) field.
121. Because it will make an eel feel.
122. I.
123. I W (I double you).
124. Because it is sent (scent) wherever it goes.
125. A dripping pan.
126. When it is a little bare (bear).
127. Letter M.
128. Like to be drowned.
129. When it rises and takes a fly.
130. When we see a rash man eating a rasher.
131. When he is a regular brick.
132. When it is made into a ruler.
133. When it is full of knots.
134. A river.
135. Facetious.

136. Largess (8).
137. It is drawn with a drag on (dragon).
138. Because it is in bliss while most of the others are in Purgatory.
139. Because you would get bad habits from him.
140. They correspond, but never meet.
141. Because he soonest takes a fence (takes offence).
142. One that is for-bidding.
143. It is the end of beef.
144. The one gathers what he sows; the other sews what she gathers.
145. Vowels.
146. It makes him yell "Oh" (yellow).
147. Anti-money (antimony).
148. Because they belong to the standing army.
149. The last.
150. The wheel, because it is tired.
151. Because without it we should have neither Christmas nor a New Year.
152. He possesses a good constitution.
153. When it is bound in Morocco.
154. One that blows foul (fowl) and chops about.
155. The outside.
156. When it can't bear you.
157. Scissors.
158. Because their existence is only infancy.
159. A pillow.
160. She is full of airs.
161. He is not at all black (a tall black).
162. Because they make a noise whenever they are tolled (told).
163. Because they are always in tiers (in tears).
164. Nothing satisfies him.
165. They ought to be taken up.
166. Because we call them to take us in.
167. When he takes notes.
168. When it is in arms.
169. A lamp lighter.
170. Debts.
171. She indulges in-fancy too much.
172. Because you hear both sides.
173. When he is going to Bray.
174. Her coachman.
175. Because the sooner it is put out the better.
176. When it is eye water (high water).
177. A wheelwright.
178. Fuller.
179. Because it is an invisible force.
180. When it is under canvass.
181. People plant them and they shoot.
182. Cork.
183. Cadmus. He carries letters from Phœnicia to Greece.
184. He is the sun and air (son and heir) of England.
185. B natural.
186. One tars his ropes, the other pitches his tent.
187. He gets his grub by the plough.
188. It shoots from the eye.
189. It is a Walkinghame (walking game).
190. Ashes.
191. Nothing.
192. They are skilled in the art of heeling (healing).
193. Falsehood.
194. Determi-nation
195. When it is made into little Pats.
196. Ode on a yew (O'Donoghue).
197. Co-nun-drum.
198. One is a native of Hungary, the other a hungry native.
199. I have not a notion (I have not an ocean).
200. It is very sew-sew (so-so) society.
201. Letter M.
202. It comes in the middle of the day.
203. Because when you put it in your pocket you double it, and when you take it out you find it in creases.
204. When King Claudius of Denmark did "murder most foul" (fowl).
205. The one was governed by deys (days), the other by knights (nights).
206. When it's a little pale (pail).
207. When it's a little reddish (radish).
208. When he is a spoon.
209. When she is anchoring (hankering) after a swell.
210. When she is attached to a buoy (boy).
211. Gray's Inn (Grazing) Lane.
212. S IX (S added).
213. Because it would be 10 to 1 if you caught it.
214. One bob (*i.e.*, one shilling).
215. Take C A B, and drive through Hammersmith to find Kew (Q).
216. A clergyman: he preaches, the doctor practises.
217. Sin-on-a-mouse (synonymous).
218. Sin.
219. Because all his works are wick-ed, and all his wick-ed works are brought to light.
220. A nail in a shoe.
221. Because they are always on the watch.
222. It is a fowl (foul) proceeding.
223. The outside.

224. Because no man living is able to make out his policy.
225. Sixteen; for (four) richer, for (four) poorer, for (four) better, for (four) worse.
226. Because they have their necks twirled in this. (Next world sounds like necks twirled).
227. He puts down three and carries one.
228. Because one trains the mind, and the other minds the train.
229. Wet.
230. Because he is often overlooked or looked over.
231. Because it comes out of a pipe.
232. Because it is a representative.
233. It is often passed over.
234. Advice.

Fortune-Telling.

THIS is a very interesting game, and may be played by any number of persons. A board is made and divided into eleven squares each way, as shown in the diagram given here, the figure one being in the centre. Each square must be numbered as in the diagram. The person who wishes to try his fortune must place his forefinger on a square without looking at it; then refer to the list for the number marked on the square touched, and you will obtain an answer, which, like those given by professed fortune tellers, will often prove false or ridiculous; as, for instance, when a married lady is told that she longs to be married (84), or a child of seven is informed that he will be married this year (89); but it is a very amusing game notwithstanding..

117	118	119	120	121	82	83	84	85	86	87
116	78	79	80	81	50	51	52	53	54	88
115	77	47	48	49	26	27	28	29	55	89
114	76	46	24	25	10	11	12	30	56	90
113	75	45	23	9	2	3	13	31	57	91
112	74	44	22	8	1	4	14	32	58	92
111	73	43	21	7	6	5	15	33	59	93
110	72	42	20	19	18	17	16	34	60	94
109	71	41	40	39	38	37	36	35	61	95
108	70	69	68	67	66	65	64	63	62	96
107	106	105	104	103	102	101	100	99	98	97

ANSWERS TO FORTUNE-TELLING.

1. A life full of changes, die rich.
2. Early marriage and prosperous.
3. Many lovers, but die single.
4. A speedy journey of great importance.
5. Become rich through a legacy.
6. Hours of pleasure, years of care.
7. Your present lover is false.
8. You will marry your present choice.
9. Wed thrice, and die in widowhood.
10. You will travel over land and sea.
11. If not already wed, you never will be.
12. Gaming will be your ruin.
13. You will be very happy in marriage.
14. You will change your love soon.
15. A long life and prosperous.
16. A rival will cause you tears.
17. Beware of a false friend.
18. Fate decrees you two partners.
19. A large family of prosperous children.
20. You will not wed your present lover.
21. You will soon fall desperately in love.
22. You will soon be in mourning.
23. You will gain an estate by industry.
24. You will better yourself by marriage.
25. You will soon lose by fraud.
26. You will marry an ill-tempered person.
27. A sudden rise attends you.
28. You will see an absent lover.
29. Many enemies, but finally triumph.
30. A bad partner, but happy reformation.
31. A speedy proposal of marriage.
32. A present, and a new lover.
33. Invitation to a gay party.
34. A serious quarrel.
35. A disgraceful intrigue.
36. A run of ill luck.
37. Gifts of money.
38. A good partner in marriage.
39. You will become rich.
40. Money through love.
41. Cash by trade.
42. A long journey.
43. Important news soon.
44. Mind what you say to a lover.
45. A present from a distance.
46. A dispute with one you love.
47. Visit from a distant friend.
48. A lawsuit.
49. Advancement in life.
150. Love at first sight.
179. A prize worth having.
180. Wealth, dignity, honour.
181. Visit to a foreign land.
182. Profit by industry.
multitude of cards.
56. Preferment through a friend.
57. Second partner better than first.
58. Surmount many difficulties.
59. A false friend.
60. A pleasing surprise.
61. A change in your affairs.
62. A ramble by moonlight.
63. Injured by scandal.
64. Unpleasant tidings.
65. Great loss and disappointment.
66. About to attend a christening.
67. Change of situation.
68. A handsome present soon.
69. An invitation to a marriage.
70. News from sea.
71. Happiness or marriage.
72. Pleasant intelligence from abroad.
73. An agreeable partner.
74. You are in love, though you won't avow it.
75. A quarrel with your intended.
76. Disappointment in love.
77. You will fall in love with one who is already engaged.
78. You will inherit an estate shortly.
79. An unexpected death.
80. You meditate an elopement.
81. A dangerous illness.
82. Crosses and disappointments await you.
83. You have three strings to your bow.
84. You long to be married.
85. Your intended is in the sere and yellow leaf.
86. A lapful of money and a lapful of children.
87. You will marry a widow or widower.
88. You will have few friends.
89. You will be married this year.
90. You will be apt to break your promise.
91. Marry in haste and repent at leisure.
92. You are in danger of losing your sweetheart.
93. Beware of changing for the worse.
94. You shall have many offers.
95. You will be happy if contented.
96. You will shortly obtain your wishes.
97. An advantageous bargain.
98. You will see your intended next Sunday for the first time.
99. Others will covet your good luck.
100. Travel in a foreign land.
101. Venture freely and you will certainly gain.
102. Your present speculations will succeed.

103. You love one who does not love you.
104. Wealth from a quarter you little suspect.
105. You will obtain your wishes through a friend.
106. A fortune is in store for you—persevere.
107. Alter your intention; you cannot succeed.
108. Remain at home for the present.
109. Ill luck awaits you.
110. Prepare for a journey.
111. You will succeed according to your wishes.
112. Beware of enemies who seek to do you harm.
113. Misfortune at first, but comfort and happiness after.
114. Prosperity in all your undertakings.
115. Rely not on one who pretends to be your friend.
116. Change your situation and you will do better.
117. It will be difficult for you to get a partner.
118. Your love is whimsical and changeable.
119. You will meet with sorrow and trouble.
120. Your love wishes to be yours this moment.
121. You will gain nothing by marriage.

THE ORACULUM OR BOOK OF FATE.

THE Oraculum which follows is a most amusing game. By some persons it has been regarded as more than a pastime. The great Napoleon constantly consulted it. It is, of course, given here merely as a pastime.

The Oraculum is gifted with every requisite variety of response to the following questions:

1. Shall I obtain my wish?
2. Shall I have success in my undertakings?
3. Shall I gain or lose in my cause?
4. Shall I have to live in foreign parts?
5. Will the stranger return?
6. Shall I recover my property?
7. Will my friend be true?
8. Shall I have to travel?
9. Does the person love and regard me?
10. Will the marriage be prosperous?
11. What sort of a wife or husband shall I have?
12. Will she have a son or daughter?
13. Will the patient recover?
14. Will the prisoner be released?
15. Shall I be lucky or unlucky?
16. What does my dream signify?

How to Work the Oraculum.

Make marks in four lines, one under another, in the following manner, making more or less in each line, according to your fancy:

* * * * * * * * *
* * * * * * * * * *
* * * * * * * * * * *
* * * * * * * * * * * * ...

Then reckon the number of marks in each line, and if it be odd, mark down one dot; if even, two dots. If there be more than nine marks, reckon the surplus ones over that number only, viz.:

The number of marks in the first line of the foregoing are odd; therefore make one mark thus..... *
In the second, even, so make two thus ..... * *
In the third, odd again, make one mark only ..... *
In the fourth, even again, two marks..... * *

To Obtain the Answer.

You must refer to THE ORACULUM, at the top of which you will find a row of dots similar to those you have produced, and a column of figures corresponding with those prefixed to the questions; guide your eye down the column, at the top of which you find the dots resembling your own, till you come to the letter on a line with the number of the question you are trying; then refer to the page having that letter at the top, and on a line with the dots which are similar to your own, you will find your answer.

The following are unlucky days, on which none of the questions should be worked, or any enterprise undertaken: January 1, 2, 4, 6, 18, 20, 22; February 6, 17, 26; March 24, 26; April 10, 27, 28; May 7, 8; June 29; July 17, 21; August 20, 22; September 5, 30; October 6; November 3, 29; December 6, 10, 15.

*** It is not right to try a question twice in the one day.

ORACULUM.

Numb.	QUESTIONS.	* * *	* * *	** * *	** ** *	** ** *	** * *	* ** *	* * **	* * **	* ** *	* ** **	* ** **	* * **	* * **	** ** **	Numb.
1	Shall I obtain my wish?	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q	1
2	Shall I have success in my undertakings?	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q	A	2
3	Shall I gain or lose in my cause?	C	D	E	F	G	H	I	K	L	M	N	O	P	Q	A	B	3
4	Shall I have to live in foreign parts?	D	E	F	G	H	I	K	L	M	N	O	P	Q	A	B	C	4
5	Will the stranger return from abroad?	E	F	G	H	I	K	L	M	N	O	P	Q	A	B	C	D	5
6	Shall I recover my property stolen?	F	G	H	I	K	L	M	N	O	P	Q	A	B	C	D	E	6
7	Will my friend be true in his dealings?	G	H	I	K	L	M	N	O	P	Q	A	B	C	D	E	F	7
8	Shall I have to travel?	H	I	K	L	M	N	O	P	Q	A	B	C	D	E	F	G	8
9	Does the person love and regard me?	I	K	L	M	N	O	P	Q	A	B	C	D	E	F	G	H	9
10	Will the marriage be prosperous?	K	L	M	N	O	P	Q	A	B	C	D	E	F	G	H	I	10
11	What sort of a wife or husband shall I have?	L	M	N	O	P	Q	A	B	C	D	E	F	G	H	I	K	11
12	Will she have a son, or a daughter?	M	N	O	P	Q	A	B	C	D	E	F	G	H	I	K	L	12
13	Will the patient recover from his illness?	N	O	P	Q	A	B	C	D	E	F	G	H	I	K	L	M	13
14	Will the prisoner be released?	O	P	Q	A	B	C	D	E	F	G	H	I	K	L	M	N	14
15	Shall I be lucky or unlucky this day?	P	Q	A	B	C	D	E	F	G	H	I	K	L	M	N	O	15
16	What does my dream signify?	Q	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	16

A.

* * *	What you wish for, you will shortly OBTAIN.
** * ** *	Signifies trouble and sorrow.
* ** * *	Be very cautious what you do THIS day, lest trouble befall you.
** * * **	The prisoner DIES, and is regretted by his friends.
** ** *	Life will be spared THIS time, to prepare for death.
** * **	A very handsome daughter, but a PAINFUL one.
** * *	You will have a virtuous woman or man, for your wife or husband.
** ** *	If you marry THIS person, you will have enemies where you little expect.
* * **	You had better decline THIS love, for it is neither constant nor true.
* * **	DECLINE your travels, for they will not be to your advantage.
** * **	There is a true and sincere friendship between you
* ** **	You will NOT recover the stolen property.
* ** *	The stranger WILL, with joy, soon return.
* * **	You will NOT remove from where you are at present.
* ** *	The Lord WILL support you in a good cause.
** ** **	You are NOT lucky—pray to God that he may help you.

B.

* * *	The luck that is ordained for you will be coveted by others.
** * **	Whatever your desires are for the present, decline them.
* ** *	Signifies a favour of kindness from some person.
** * **	There ARE enemies who would defraud and render you unhappy.
** ** *	With great difficulty he will obtain pardon or release again.
** ** **	The patient should be prepared to LEAVE this world.
** * *	She will have a SON, who will be learned and wise.
** * *	A RICH partner is ordained for you.
* * **	By THIS marriage you will have great luck and prosperity.
* * **	THIS love comes from an upright and sincere heart.

God WILL surely travel with you, and bless you.

Beware of friends who are false and deceitful.

You WILL recover your property —unexpectedly.

Love prevents his return home at present.

Your stay is NOT here : be therefore prepared for a change.

You will have NO GAIN ; therefore be wise and careful.

C.

With the blessing of God, you WILL have great gain.

Very unlucky indeed — pray to God for his assistance.

If your desires are NOT extravagant, they will be granted.

Signifies peace and plenty between friends.

Be well prepared for THIS day, or you may meet with trouble.

The prisoner WILL find it difficult to obtain his pardon or release.

The patient WILL YET enjoy health and prosperity.

She WILL have a daughter, and will require attention.

The person has NOT a great fortune, but is in middling circumstances.

Decline THIS marriage or else you may be sorry.

Decline a courtship which MAY be your destruction.

Your travels are IN VAIN : you had better stay at home.

You MAY DEPEND on a true and sincere friendship.

You must NOT expect to regain that which you have lost.

SICKNESS prevents the traveller from seeing you.

It will be your fate to stay where now are.

D.

You WILL obtain a great fortune in another country.

By venturing freely, you WILL certainly gain doubly.

God WILL change your misfortune into success and happiness.

Alter your intentions, or else you MAY meet poverty and distress.

Signifies you have many impediments in accomplishing your pursuits.

Whatever may possess your inclinations this day, abandon them.

The p isoner WILL get free again this time.

The patient's illness will be lingering and doubtful.

She will have a dutiful and handsome son.

The person will be LOW in circumstances, but honest-hearted.

A marriage which WILL ADD to your welfare and prosperity.

You love a person who does not speak well of you.

Your travels WILL be prosperous, if guided by prudence.

He means NOT what he says, for his heart is false.

With some trouble and expense, you may regain your property.

You must NOT expect to see the stranger again.

E.

The stranger WILL NOT return so soon as you expect.

Remain among your friends, and you will do well.

You will hereafter GAIN what you seek.

You have NO LUCK—pray to God, and strive honestly.

You will obtain your wishes by means of a friend.

Signifies you have enemies who will endeavour to ruin you.

Beware—an enemy is endeavouring to bring you to strife and misfortune.

The prisoner's sorrow and anxiety are great, and his release uncertain.

The patient WILL soon recover—there is no danger.

She will have a daughter who will be honoured and respected.

Your partner WILL be fond of liquor and will debase himself thereby.

This marriage will bring you to poverty, be therefore discreet.

Their love is false to you, and true to others.

DECLINE your travels for the present, for they will be dangerous.

THIS person is serious and true, and deserves to be respected.

You will not recover the property you have lost.

F.

By persevering you WILL recover your property again.

It is out of the stranger's power to return.

You will GAIN, and be successful in foreign parts.

A great fortune is ordained for you; wait patiently.

There is a great hindrance to your success at present.

Your wishes are in VAIN at present.

Signifies there is sorrow and danger before you.

THIS day is unlucky; therefore alter your intention.

The prisoner will be restored to liberty and freedom.

The patient's recovery is doubtful.

She will have a very fine BOY.

A worthy person, and a fine fortune.

Your intentions would destroy your rest and peace.

THIS love is true and constant; forsake it not.

PROCEED on your journey, and you will not have cause to repent it.

If you trust THIS friend, you may have cause for sorrow.

G.

This friend exceeds all others in every respect.

You must bear your loss with fortitude.

The stranger will return unexpectedly.

Remain at HOME with your friends, and you will escape misfortunes.

You will meet no GAIN in your pursuits.

Heaven will bestow its blessings on you.

No.

Signifies that you will shortly be out of the POWER of your enemies.

ILL-LUCK awaits you—it will be difficult for you to escape it.

The prisoner will be RELEASED by death only.

By the blessing of God the patient WILL recover.

A daughter, but of a very sickly constitution.

You will get an honest, young, and handsome partner.

Decline this marriage, else it may be to your sorrow.

Avoid this love.

Prepare for a short journey; you will be recalled by unexpected events.

H.

Commence your travels, and they will go on as you could wish.

Your pretended friend hates you secretly.

Your hopes to recover your property are vain.

A certain affair prevents the stranger's return immediately.

Your fortune you will find in abundance abroad.

Decline the pursuit and you will do well.

Your expectations are vain—you will not succeed.

You will obtain what you wish for.

Signifies that on this day your fortune will change for the better.

Cheer up your spirits, your luck is at hand.

After LONG imprisonment he will be released.

The patient will be relieved from sickness.

She will have a healthy SON.

You will be married to your equal in a short time.

If you wish to be happy, do not marry this person.

This love is from the heart, and will continue until death.

I.

The love is great, but will cause great jealousy.

It will be in vain for you to travel.

Your friend will be as sincere as you could wish him to be.

You will recover the stolen property through a cunning person.

The traveller will soon return with joy.

You will not be prosperous or fortunate in foreign parts.

Place your trust in GOD, who is the disposer of happiness.

Your fortune will shortly be changed into misfortune.

You will succeed as you desire.

Signifies that the misfortune which threatens will be prevented.

Beware of your enemies, who seek to do you harm.

After a short time your anxiety for the prisoner will cease.

God will give the patient health and strength again.

She will have a very fine daughter.

You will marry a person with whom you will have little comfort.

The marriage will not answer your expectations.

K.

After much misfortune you will be comfortable and happy.

A sincere love from an upright heart.

You will be prosperous in your journey.

Do not RELY on the friendship of this person.

The property is lost FOREVER; but the thief will be punished.

The traveller will be absent some considerable time.

You will meet luck and happiness in a foreign country.

You will not have any success for the present.

You will succeed in your undertaking.

Change your intentions and you will do well.

Signifies that there are rogues at hand.

Be reconciled, your circumstances will shortly mend.

The prisoner will be released

The patient will depart this life.

She will have a son.

It will be difficulty for you to get a partner.

L.

You will get a very handsome person for your partner.

Various misfortunes will attend this marriage.

This love is whimsical and changeable.

You will be unlucky in your travels.

This person's love is just and true. You may rely on it.

You will lose, but the thief will suffer most.

The stranger will soon return with plenty.

If you remain at home, you will have success.

Your gain will be trivial.

You will meet sorrow and trouble.

You will succeed according to your wishes.

Signifies that you will get money.

In spite of enemies you will do well.

The prisoner will pass many days in confinement.

The patient will recover.

She will have a daughter.

M.

She will have a son, who will gain wealth and honour.

You will get a partner with great undertakings and much money.

The marriage will be prosperous.

She, or he, wishes to be yours this moment.

Your journey will prove to your advantage.

Place no great trust in that person.

You will find your property at a certain time.

The traveller's return is rendered doubtful by his conduct.

You will succeed as you desire in foreign parts.

Expect no gain; it will be in vain.

You will have more LUCK than you expect.

Whatever your desires are, you will speedily obtain them.

Signifies you will be asked to a wedding.

You will have no occasion to complain of ill-luck.

Some one will pity and release the prisoner.

The patient's recovery is unlikely.

N.

The patient will recover, but his days are short.

She will have a daughter.

You will marry into a very respectable family.

By this marriage you will gain nothing.

Await the time and you will find the love great.

Venture not from home.

This person is a sincere friend.

You will never recover the theft.

The stranger will return, but not quickly.

When abroad, keep from evil women or they will do you harm.

You will soon gain what you little expect.

You will have great success.

Rejoice ever at that which is ordained for you.

Signifies that sorrow will depart, and joy will return.

Your luck is in blossom; it will soon be at hand.

Death may end the imprisonment.

O.

The prisoner will be released with joy.

The patient's recovery is doubtful.

She will have a son, who will live to a great age.

You will get a virtuous partner.

Delay not this marriage—you will meet much happiness.

None loves you better in this world.

You may proceed with confidence.

Not a friend, but a secret enemy.

You will soon recover what is stolen.

The stranger will not return again.

A foreign woman will greatly enhance your fortune.

You will be cheated out of your gain.

Your misfortunes will vanish and you will be happy.

Your hope is in vain — fortune shuns you at present.

That you will soon hear agreeable news.

There are misfortunes lurking about you.

P.

This day brings you an increase of happiness.

The prisoner will quit the power of his enemies.

The patient will recover and live long.

She will have two daughters.

A rich young person will be your partner.

Hasten your marriage — it will bring you much happiness.

The person loves you sincerely.

You will not prosper from home.

This friend is more valuable than gold.

You will NEVER receive your goods.

He is dangerously ill, and cannot yet return.

Depend upon your own industry, and remain at home.

Be joyful, for future prosperity is ordained for you.

Depend not too much on your good look.

What you wish will be granted to you.

That you should be very careful this day, lest any accident befall you.

Q.

Signifies much joy and happiness between friends.

This day is not very lucky, but rather the reverse.

He will yet come to honour, although he now suffers.

Recovery is doubtful ; therefore, be prepared for the worst.

She will have a son, who will prove forward.

A rich partner, but a bad temper.

By wedding this person you insure your happiness.

The person has great love for you, but wishes to conceal it.

You may proceed on your journey without fear.

Trust him not ; he is inconstant and deceitful.

In a very singular manner you will recover your property.

The stranger will return very soon.

You will dwell abroad in comfort and happiness.

If you will deal fairly, you will surely prosper.

You will yet live in splendour and plenty.

Make yourself contented with your PRESENT fortune.

Games, Forfeits, Etc.

THE following games are extremely interesting and amusing, and are so simple that they may be easily understood and attempted.

In playing forfeits, it is well for the person demanding the forfeit not to be too extreme in his or her demand.

The Tidy Parlour Maids.

TWO LADIES.

FIRST LADY.—Shall we dust the drawing-room ornaments, Belinda?
SECOND LADY.—Yes, Lucinda.

[They go round, and with a feather brush, dust all the gentlemen in the room. If either the maids or the gentlemen laugh, the person so offending must pay a forfeit.]

Botanical Questions.

ALL THE LADIES AND ONE GENTLEMAN.

GENTLEMAN.—How many pretty noses goses
To make a bunch of roses?
The question is asked of each lady, who answers—
I suppose two noses
Make a bunch of roses.

[These words must be spoken with perfect gravity. Any one laughing is obliged to repeat them until he or she can do so gravely.]

Selling Adonis.

ONE LADY AND ONE GENTLEMAN.

The gentleman must stand on a chair in the centre of the room, while the lady-auctioneer, pointing to him, says: "Adonis for sale!" She must then enumerate all his qualities, charms, and attractions. The company then bid anything they please for him—such as a red-herring, a tea-kettle, a curb-bridle, a magic lantern, the old grey goose, a lump of sugar, etc. The bidding is to go on till one bids a pound of soft-soap, when the lot is

taken to him by the auctioneer. No one is to laugh on pain of paying a forfeit.

The Anxious Mother.

ONE GENTLEMAN AND FIVE LADIES.

A gentleman, in a cap and shawl, is seated with daughters before him, sitting in a row, when he instructs them, by example, how to smile, simper, look bashful, languishing, sing, titter, and laugh. A bright and lively gentleman can make this game a great source of amusement.

Poor Puss.

ALL THE LADIES AND ONE GENTLEMAN.

The gentleman goes round and says to each lady "Poor Puss," to which she must gravely answer, "Me-ew! Me-ew!" Whoever laughs or smiles must pay a forfeit. The fun lies in the fact that one or more will find it impossible to refrain from laughing.

Magic Music.

FOUR GENTLEMEN.

They must be seated in a row, and throwing themselves back in their chairs, must all snore in different keys; the Dead March in Saul being played over three times as an accompaniment. Any one who laughs is to be punished at the discretion of the company.

Mdlle Potoloski and Her Dancing Bear.

ONE GENTLEMAN AND ONE LADY.

The lady, holding the gentleman by a string or ribbon, makes him dance or perform whatever antics she chooses, he being obliged to obey her orders. Laughing is to be punished by a forfeit.

The Musical Duck.

ONE GENTLEMAN AND ONE LADY.

The gentleman chooses any lady who can sing, and she is to sing, to any air she pleases, the words "Quack! quack!" using no other words, and singing the air correctly.

Miss Ann and Jane Smith's Tabby Cats.

TWO GENTLEMEN AND ALL THE LADIES.

The ladies all remain in their places, and two gentlemen in shawls and bonnets or caps go round, one with a saucer of milk, the other with a teaspoon, with which she gives a sip of milk to each, saying, "Take that, my pretty puss!" to which, after taking it, "puss" must gravely answer "Mew." Laughter must be severely punished.

The Horrid Man.

ONE GENTLEMAN.

He must go round and pay a bad compliment to every lady in the room, who is to answer "You horrid man!" Any one who laughs is to pay a forfeit.

The Rebuff.

A LADY OR GENTLEMAN.

The lady or gentleman go and perform a sneeze to each of the gentlemen, if a lady, and *vice versa*. The answer is to be, "I'm not to be sneezed at." No one must laugh under penalty of paying a forfeit. Those who can command their gravity must indeed have a rare control over themselves.

Pat a Cake.

TWO GENTLEMEN—LADIES *ad lib.*

The two gentlemen sit on low stools, patting each other's head. The ladies dance round three times, singing—

Pat a cake, pat a cake, baker's man,
Make it and bake it as fast as you can;
Make it, and bake, and mark it with B,
The letter for Beauty, then give it to me.

The Tipsy Polka.

The set stand up and dance, the music constantly changing time. Each player must keep time, and maintain his gravity under penalty of paying a forfeit.

Confidences.

THE WHOLE COMPANY.

This game is an amusing illustration of how a tale gains in telling. A lady must whisper to her next-door neighbour (*i. e.*, the person sitting by her) an account of something which one of the gentlemen present has said or done. The listener repeats it, in a whisper also, to the lady or gentleman seated by her; and thus it is whispered from one to the other all round the room, till it reaches the last person, who repeats it aloud. It will be found, no doubt, that, either through mistake or *playful* malice, it has gained considerably in its passage round the circle.

Then a gentleman has to do the same, choosing one of the ladies present as the heroine of his tale, and this "confidence" is repeated all around the room till it reaches the last person, as before. Example of the game:

First Lady whispers—"Mr. Smith has just told me that he saw a gentleman this morning smoking a cigar outside an omnibus, who looked just like a gorilla."

Second Lady whispers—"Mr. Smith saw a gentleman on an omnibus just like a gorilla, and he was smoking a cigar."

Fourth Gentleman (a little deaf)—"Smith saw a gorilla this morning, as he was smoking a cigar on the omnibus with a gentleman."

Fifth Speaker—"Mr. Smith saw a gorilla on an omnibus this morning. He was smoking a cigar with another gentleman."

Sixth Speaker—"Mr. Smith saw the gorilla to-day. It was on an omnibus, with its keeper, and it was smoking a cigar."

Seventh Speaker—"Smith saw Monsieur de Chaillu this morning with his gorilla on an omnibus. They were both smoking cigars."

Eighth Speaker—"Smith saw Mons. de Chaillu this morning on an omnibus; he had two gorillas with him, who were smoking cigars."

Ninth Speaker—"Smith sat by De Chaillu and his gorilla this morning on the omnibus, and the gorilla actually smoked a cigar with him."

Tenth Speaker—"I have just heard, with much surprise, that Smith travelled on an omnibus this morning with Monsieur de Chaillu and his gorillas, and that Smith gave the monkeys a cigar. The two monkeys smoked as well as Mr. Smith can."

Eleventh Speaker—"Smith went on a 'bus this morning, and by his side were De Chaillu and his gorillas. Smith gave them a cigar and the two monkeys smoked together."

Twelfth Speaker (repeats aloud)—"I have just heard Smith called a monkey by Miss Brown—since the story comes originally from her. It seems, that *she* says that Smith went on an omnibus to-day wirh Mons-

ieur de Chaillu and the gorilla; that Smith gave the gorilla a cigar and took one himself; and that the two monkeys, *i. e.*, I suppose, *Smith and the gorilla*, smoked together!"

Mr. Smith bows his thanks. The first lady repeats *verbatim* her whisper, to the amazement of the circle.

The Divination of the Elements.

An Old Scotch Game.

A row of soup-plates is put on the table. One plate holds water, another earth, another air—*i. e.*, it is left empty; in another is a pistol.

Any lady wishing to learn her future fate is taken from the room and blindfolded; the plates are moved and change places meantime. Then she is led to the table and told to put her hand on a plate, whichever she chooses, If she puts her finger in the water, it is a sign that she will marry a sailor, or take long voyages: if she touch the earth, she will be a stay-at-home, or marry a civilian, either a merchant or a professional man; if she touches the empty or air-plate, she will live single, "free as air;" if she touches the pistol, she will marry a soldier.

This funny divination can be adapted to gentlemen by making the water represent a fair and fickle wife or long voyage; the earth, a dark and domestic wife, with a landed inheritance; the air, or empty plate, old bachelorhood; the pistol, a quarrelsome wife, etc.

Another and prettier way of playing this game is by arranging three soup-plates on a side table covered with a cloth. In one is clean water; in another, dirty water; in the third, earth.

The inquirer into futurity is blindfolded; the plates are moved and changed about so that she cannot tell how they stand. Then she is led to the table and puts her hand out, and whichever plate she touches, is significant of her future fate.

If she touches the clean water, she will marry the man she loves.

If she touches the dirty water, she will marry unhappily.

If she finds the earth, she will die unmarried. The divination can, of course, be used by gentlemen.

The Quiet Little Dears.

Three Gentlemen.

They must sit in the middle of the room with books on their laps, on which they must each build a card house. They are not to move until the three houses are standing together.

The Man who is too Happy.

ONE GENTLEMAN AND SIX LADIES.

The gentleman sitting in the middle of the room must be complimented and paid attention by each lady in turn. Without rising, he is to respond by every species of grateful manner; first murmuring in a whisper, "I'm too happy," increasing in the tone of his voice each time, till reaching the highest note, he rushes out of the room.

The Quakers' Meeting.

THE WHOLE COMPANY.

The leader of the game must arrange the company in a circle as Quakers. The ladies need only sit up very primly, and twirl their thumbs round and round slowly, looking steadily on the carpet. Any lady looking up, or ceasing to twirl her thumbs, must pay a forfeit. Then the leader of the game must direct a gentleman to repeat after him, in a drawling tone (twirling his thumbs slowly all the while), these words:

"Verily, verily, I do say."

Each gentleman must repeat the same words, in turn, twirling his thumbs the while. When they have been repeated by all the gentlemen, the first must say:

"Verily, verily, I do say
That I must go to-day."

The words are to be echoed in like manner. Then the first speaker adds:

"Verily, verily, I do say
That I must go to-day,
To visit my sick brother,
O-BA-DI-AY."

After which he rises, goes into the middle of the room, and kneels down. The nearest gentleman follows, and kneels close to him; the next close to the last, and so on, till they form a line. Then the leader of the game must place himself last, kneeling also; and, by giving a sudden push to the last player, he will cause the whole row to fall down like a row of cards on the carpet. The ladies are strictly forbidden to laugh at the catastrophe, or to cease twirling their thumbs, under pain of paying a forfeit.

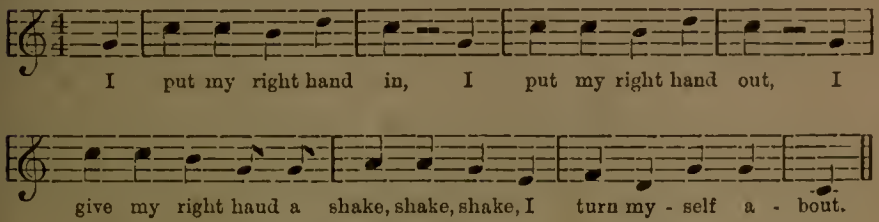
To Tell Any Number Thought Of.

Ask a person to think of a number; then tell him to substract 1 from that number; now tell him to multiply the remainder by 2; then request him again to substract 1, and add to the remainder the number he first thought of, and to inform you of the total. When he has done this, you must mentally add three to that total, and then divide it by 3, and the quotient will be the number first thought of. This is an excellent arithmetical pastime, examples of which is given below:

10	15	18	23
1	1	1	1
9	14	17	22
2	2	2	2
18	28	34	44
1	1	1	1
17	27	33	43
10	15	18	23
27	42	51	66
3	3	3	3
3)30	3)45	3)54	3)69
10	15	18	23

The Ugly Mug.

A leader is chosen, and the remainder of the company must follow every motion that he makes, while he sings the description.



The leader should stand facing the others, and his gestures are exactly as he describes them.

LEADER. (*Singing and making the appropriate gestures, which all imitate.*)

I put my right hand in! (*extending the right hand before him.*)

I put my right hand out! (*turning half round, and again extending the right hand.*)

I give my right hand a shake, shake, shake! (*shaking the right hand.*)

I turn myself about! (*turns back to first position.*)

The same gestures are performed with the left hand while singing,

I put my left hand in!
I put my left hand out!
I give my left hand a shake, shake, shake!
I turn myself about!

The same performance is gone through with both hands, while singing.

I put my both hands in, etc.

At the conclusion of which, the leader continues the gestures with his right foot, singing:

I put my right foot in!
I put my right foot out!
I give my right foot a shake, shake, shake!
I turn myself about!

The same thing is done with the left foot, with the words:

I put my left foot in, etc.

The head is the next member brought into active service.

I put my ugly mug in! (*stretching the head and neck forward.*)

I put my ugly mug out! (*turning half round and repeating the same motion.*)

I give my ugly mug a shake, shake, shake! (*nodding the head vigorously.*)

I turn myself about!

If the gravity of the company will stand this test, knowing every smile must cost a forfeit, choose a new leader and try again to collect some forfeits. This will, however, be scarcely called for, as the first time round will surely provide a pretty large crop of forfeits.

The Hutchinson family.

Several of the party who do not know the trick of the game must be selected to leave the room, while the others are instructed in their parts

One of the absent ones is then recalled and introduced as Mr. or Miss Hutchinson.

The remainder of the party must then imitate exactly every movement made by this member of the Hutchinson family, even of the most trifling description. If the unconscious leader moves an arm, every arm in the company makes the same movement; if any play of feature, such as a look of surprise, follows, every one in the company assumes the same expression; if a wondering look is given around the room, the head moving to each side, all make precisely the same gesture. This procedure is continued until Mr. or Miss Hutchinson Number One sees into the little game, and ends it by taking a seat in motionless quiet. Hutchinson Number Two is next ushered in to go through the same ceremonial, and the game is repeated until the Hutchinson family is extinct.

It sometimes happens that a quick-witted Hutchinson will find out the trick before acknowledging the discovery, and lead the others a dance they did not anticipate, as one merry young lady "seeing the point," walked slowly and with great gravity up and down a long drawing-room, and out of one door into the hall, across this into the room again, and round the room, all the others following her till they cried for mercy.

A gentleman, after staring, yawning, and making horrible grimaces at his imitators, suddenly commenced a series of taps on each side of his nose with the forefingers of both hands, and with constantly increasing rapidity, all trying to follow him, till they were so convulsed with laughter that they were forced to admit the joke was all in his hands.

The Messenger.

The party are seated in a line, or round the sides of a room, and some one previously appointed enters with the message, "My master sends me to you, madam," or "sir," as the case may be, directed to any individual he may select at his option. "What for?" is the natural inquiry. "To do as I do;" and with this the messenger commences to perform some antic, which the lady or gentleman must imitate—say he wags his head from side to side or taps with one foot incessantly on the floor. The person whose duty it is to obey commands his neighbour to the right or to the left to "Do as I do," also; and so on until the whole company are in motion, when the messenger leaves the room, re-entering with fresh injunctions. While the messenger is in the room he must see his master's will obeyed, and no one must keep from the movement without suffering a forfeit. The messenger should be some one ingenious in making the

antics ludicrous, and yet kept within moderate bounds, and the game will not fail to produce shouts of laughter.

Among the other tricks which may be commended are such as rocking the body too and fro, wiping the eyes with a pocket-handkerchief, yawning, whistling, stroking the chin or the beard, and making any grimace.

Another game, of much the same character, is known by the title, "Thus says the Grand Seignor." The chief difference is that the first player is stationed in the centre of the room, and prefaces his movements, which the others must all follow, by the above words. If he varies his command by framing it, "*So* says the Grand Seignor," the party must remain still, and decline to follow his example. Any one who moves when he begins with "So," or does not follow him when he commences with "Thus," has to pay a forfeit.

Etiquette for Ladies.

ETIQUETTE may be defined as the minor morality of life. Its laws, like all other social laws, are the accumulated results of the wisdom and experience of many generations. They form a code with which every educated person is bound to be acquainted; and the object of this portion of the Cyclopædia is to place that code before the reader in as succinct, as agreeable, and as explanatory a light as the subject admits of. We hope and believe that it will be found in all respects a trusty and pleasant guide.

INTRODUCTIONS.

To introduce persons who are mutually unknown is to undertake a serious responsibility, and to certify to each the respectability of the other. Never undertake this responsibility without, in the first place, asking yourself whether the persons are likely to be agreeable to each other; nor, in the second place without ascertaining whether it will be acceptable to both parties to become acquainted.

Always introduce the gentleman to the lady—never the lady to the gentleman. The chivalry of etiquette assumes that the lady is invariably the superior in right of her sex, and that the gentleman is honoured in the introduction.

Never present a gentleman to a lady without first asking her permission to do so.

When you are introduced to a gentleman, never offer your hand. When introduced, persons limit their recognition of each other to a bow.

Persons who have met at the house of a mutual friend without being introduced should not bow if they afterwards meet elsewhere. A bow implies acquaintance; and persons who have not been introduced are not acquainted.

If you are walking with one friend, and presently meet with, or are joined by, a second, do not commit the too frequent error of introducing them to each other. You have even less right to do so than if they encountered each other at your house during a morning call.

There are some exceptions to the etiquette of introduction. At a ball, or evening party where there is dancing, the mistress of the house may introduce any gentleman to any lady without first asking the lady's permission. But she should first ascertain whether the lady is willing to dance; and this out of consideration for the gentleman, who may otherwise be refused. No man likes to be refused the hand of a lady, though it be only for a quadrille.

A sister may present her brother, or a mother her son, without any kind of preliminary.

Friends may introduce friends at the house of a mutual acquaintance; but, as a rule, it is better to be introduced by the mistress of the house. Such an introduction carries more authority with it.

Introductions at evening parties are now almost wholly dispensed with. Persons who meet at a friend's house are ostensibly upon an equality, and pay a bad compliment to the host by appearing suspicious and formal. Some old-fashioned country hosts still persevere in introducing each new comer to all the assembled guests. It is a custom that cannot be too soon abolished, and one that places the last unfortunate visitor in a singularly awkward position. All that she can do is to make a semicircular courtesy, like a concert singer before an audience, and bear the general gaze with as much composure as possible.

An introduction given at a ball for the mere purpose of conducting a lady through a dance does not give the gentleman any right to bow to her

on a future occasion. If he commits this error, she may remember that she is not bound to see, or return, his salutation.

LETTERS OF INTRODUCTION.

Do not lightly give or promise letters of introduction. Always remember that when you give a letter of introduction you lay yourself under an obligation to the friend to whom it is addressed. If she lives in a great city, such as Chicago or Boston, you in a measure compel her to undergo the penalty of escorting the stranger to some of those places of public entertainment in which the capital abounds. If your friend be a married lady, and the mistress of a house, you put her to the expense of inviting the stranger to her table. We cannot be too cautious how we tax the time and purse of a friend, or weigh too seriously the question of mutual advantage in the introduction. Always ask yourself whether the person introduced will be an acceptable acquaintance to the one to whom you present her; and whether the pleasure of knowing her will compensate for the time or money which it costs to entertain her. If the stranger is in any way unsuitable in habits or temperament, you inflict an annoyance on your friend instead of a pleasure. In questions of introduction never oblige one friend to the discomfort of another.

Those to whom letters of introduction have been given should send them to the person to whom they are addressed, and enclose a card. Avoid delivering a letter of introduction in person. It places you in the most undignified position imaginable, and compels you to wait while it is being read, like a servant who has been told to wait for an answer. If the receiver of the letter be a really well-bred person, she will call upon you or leave her card the next day, and you should return her attention within the week.

If, on the other hand, a stranger sends you a letter of introduction and her card, you are bound by the laws of politeness and hospitality, not only to call upon her the next day, but to follow up that attention with others. If you are in a position to do so, the most correct proceeding is to invite her to dine with you. Should this not be within your power, you can probably escort her to some of the exhibitions, bazaars, or concerts of the season; any of which would be interesting to a provincial visitor. In short, etiquette demands that you shall exert yourself to show kindness to the stranger, if only out of compliment to the friend who introduced her to you.

If you invite her to take dinner with you, it is a better compliment to ask some others to meet her, than to dine with her *tête-à-tête*. You are

thereby giving her an opportunity of making other acquaintances, and are assisting your friend in still further promoting the purpose for which she gave her the introduction to yourself.

A letter of introduction should be given unsealed, not alone because your friend might wish to know what you have said of her, but also as a guarantee of your own good faith. As you should never give such a letter unless you can speak highly of the bearer, this rule of etiquette is easy to observe. By requesting your friend to fasten the envelope before forwarding the letter to its destination, you tacitly give her permission to inspect its contents.

VISITING CARDS.

Visits of ceremony should be short. If even the conversation should have become animated, beware of letting your call exceed half an hour's length. It is always better to let your friends regret rather than desire your withdrawal.

On returning visits of ceremony you may, without impoliteness, leave your card at the door without going in. Do not fail, however, to inquire if the family be well.

Should there be daughters or sisters residing with the lady upon whom you call, you may turn down a corner of your card, to signify that the visit is paid to all. It is better taste, however, to leave cards for each.

Unless when returning thanks for "kind inquiries," or announcing your arrival in, or departure from, town, it is not considered respectful to send round cards by a servant.

Leave-taking cards have P.P.C. (*pour prendre congé*) written in the corner. Some use P.D.A. (*pour dire adieu*).

Autographic fac-similes for visiting cards are affectations in any persons but those who are personally remarkable for talent, and whose autographs, or fac-similes of them, would be prized as curiosities.

Visits of condolence are paid within the week after the event which occasions them. Personal visits of this kind are made by relations and very intimate friends only. Acquaintances should leave cards with narrow mourning borders.

On the first occasion when you are received by the family after the death of one of its members, it is etiquette to wear slight mourning.

Umbrellas should invariably be left in the hall.

Never take favourite dogs into a drawing-room when you make a morning call. Their feet may be dusty, or they may bark at the sight of

strangers, or, being of a too friendly disposition, may take the liberty of lying on a lady's gown, or jumping on the sofas and easy chairs. Where your friend has a favourite cat already established before the fire, a battle may ensue, and one or both of the pets be seriously hurt. Besides, many persons have a constitutional antipathy to dogs, and others never allow their own to be seen in the sitting-rooms. For all or any of these reasons, a visitor has no right to inflict upon her friend the society of her dog as well as of herself. Neither is it well for a mother to take young children with her when she pays morning visits; their presence, unless they are unusually well trained, can only be productive of anxiety to both yourself and your hostess. She, while striving to amuse them, or to appear interested in them, is secretly anxious for the fate of her album, or the ornaments on her *étagère*; while the mother is trembling lest the children should say or do something objectionable.

If other visitors are announced, and you have already remained as long as courtesy requires, wait till they are seated, and then rise from your chair, take leave of your hostess, and bow politely to the newly arrived guests. You will, perhaps, be urged to remain, but having once risen, it is best to go. There is always a certain air of *gaucherie* in resuming your seat and repeating the ceremony of leave-taking.

If you have occasion to look at your watch during a call, ask permission to do so, and apologize for it on the plea of other appointments.

In receiving morning visitors, it is not necessary that the lady should lay aside the employment in which she may be engaged, particularly if it consists of light or ornamental needle-work. Politeness, however, requires that music, drawing, or any occupation which would completely engross the attention, be at once abandoned.

You need not advance to receive visitors when announced, unless they are persons to whom you are desirous of testifying particular attention. It is sufficient if a lady rises to receive her visitors, moves forward a single step to shake hands with them, and remains standing till they are seated.

When your visitors rise to take leave you should rise also, and remain standing till they have quite left the room.

A lady should dress well, but not too richly, when she pays a morning visit.

CONVERSATION.

There is no conversation so graceful, so varied, so sparkling, as that of an intellectual and cultivated woman. Excellence in this particular is,

indeed, one of the attributes of the sex, and should be cultivated by every gentlewoman who aspires to please in general society.

In order to talk well, three conditions are indispensable, namely—tact, a good memory, and a fair education.

Remember that people take more interest in their own affairs than in anything else which you can name. If you wish your conversation to be thoroughly agreeable, lead a mother to talk of her children, a young lady of her last ball, an author of his forthcoming book, or an artist of his exhibition picture. Having furnished the topic, you need only listen; and you are sure to be thought not only agreeable, but thoroughly sensible and well-informed.

Be careful, however, on the other hand, not always to make a point of talking to persons upon general matters relating to their profession. To show an interest in their immediate concerns is flattering; but to converse with them too much about their own arts looks as if you thought them ignorant of other topics.

Remember in conversation that a voice "gentle and low" is, above all other extraneous acquirements, "an excellent thing in woman." There is a certain distinct but subdued tone of voice which is peculiar to only well-bred persons. A loud voice is both disagreeable and vulgar. It is better to err by the use of too low rather than too loud a tone.

Remember that all "slang" is vulgar.

The use of proverbs is equally vulgar in conversation; and puns, unless they rise to the rank of witticisms, are to be scrupulously avoided. A lady-punster is a most unpleasing phenomenon, and we would advise no young woman, however witty she may be, to cultivate this kind of verbal talent.

Long arguments in general company, however entertaining to the disputants, are tiresome to the last degree to all others. You should always endeavour to prevent the conversation from dwelling too long upon one topic.

Religion is a topic which should never be introduced into society. It is the one subject on which persons are most likely to differ, and least able to preserve temper.

Never interrupt a person who is speaking. It has been aptly said that "if you interrupt a speaker in the middle of his sentence, you act almost as rudely as if, when walking with a companion, you were to thrust yourself before him, and stop his progress."

To listen well is almost as great an art as to talk well. It is not enough

only to listen. You must endeavour to seem interested in the conversation of others.

It is considered extremely ill bred when two persons whisper in society, or converse in a language with which all present are not familiar. If you have private matters to discuss, you should appoint a proper time and place to do so, without paying others the ill compliment of excluding them from your conversation.

If a foreigner be one of the guests at a small party, and does not understand English sufficiently to follow what is said, good breeding demands that the conversation shall be carried on in his own language. If at a dinner-party, the same rule applies to those at his end of the table.

If upon the entrance of a visitor you carry on the thread of a previous conversation, you should briefly recapitulate to him what has been said before he arrived.

Do not be *always* witty, even though you should be so happily gifted as to need the caution. To outshine others on every occasion is the surest road to unpopularity.

Always look, but never stare, at those with whom you converse.

In order to meet the general needs of conversation in society, it is necessary that a gentlewoman should be acquainted with the current news and historical events of, at least, the last few years.

Never talk upon subjects of which you know nothing, unless it be for the purpose of acquiring information. Many young ladies imagine that because they play a little, sing a little, draw a little, and frequent exhibitions and operas, they are qualified judges of art. No mistake is more egregious or universal.

Those who introduce anecdotes into their conversation are warned that these should invariably be "short, witty, eloquent, new, and not far-fetched."

Scandal is the least excusable of all conversational vulgarities.

DRESS.

To dress well requires something more than a full purse and a pretty figure. It needs taste, good sense, and refinement. Dress may almost be classed as one of the fine arts. It is certainly one of those arts the cultivation of which is indispensable to any person moving in the upper or middle classes of society. Very clever women are too frequently indifferent to the graces of the toilette; and women who wish to be thought clever affect indifference. In the one case it is an error, and in the other a folly.

It is not enough that a gentlewomen should be clever, or well-educated, or well-born. To take her due place in society, she must be acquainted with all that this little book proposes to teach. She must, above all else, know how to enter a room, how to perform a graceful salutation, and how to dress. Of these three important qualifications, the most important, because the most observed, is the latter.

Let your style of dress always be appropriate to the hour of the day. To dress too finely in the morning, or to be seen in a morning dress in the evening, is equally vulgar and out of place.

Light and inexpensive materials are fittest for morning wear; dark silk dresses for the promenade or carriage; and low dresses of rich or transparent stuffs for the dinner and ball. A young lady cannot dress with too much simplicity in the early part of the day. A morning dress of some simple material, and delicate whole colour, with collar and cuffs of spotless linen, is, perhaps, the most becoming and elegant of morning toilettes.

Never dress very richly or showily in the street. It attracts attention of no enviable kind, and is looked upon as a want of good breeding. In the carriage a lady may dress as elegantly as she pleases. With respect to ball-room toilette, its fashions are so variable, that statements which are true of it to-day may be false a month hence. Respecting no institution of modern society, is it so difficult to pronounce half-a-dozen permanent rules.

We may, perhaps, be permitted to suggest the following leading principles; but we do so with diffidence. Rich colours harmonize with rich brunette complexions and dark hair. Delicate colours are the most suitable for delicate and fragile styles of beauty. Very young ladies are never so suitably attired as in white. Ladies who dance should wear dresses of light and diaphanous materials, such as *tulle*, gauze, crape, net, etc., over coloured silk slips. Silk dresses are not suitable for dancing. A married lady who dances only a few quadrilles may wear a *décolletée* silk dress with propriety.

Very stout persons should never wear white. It has the effect of adding to the bulk of the figure.

Black and scarlet, or black and violet, are worn in mourning.

A lady in deep mourning should not dance at all.

However fashionable it may be to wear very long dresses, those ladies who go to a ball with the intention of dancing, and enjoying the dance, should cause their dresses to be made short enough to clear the ground. We would ask them whether it is not better to accept this slight deviation

from an absurd fashion, than to appear for three parts of the evening in a torn and pinned-up skirt?

Well-made shoes, whatever their colour or material, and faultless gloves, are indispensable to the effect of a ball-room toilette.

Much jewellery is out of place in a ball-room. Beautiful flowers, whether natural or artificial, are the loveliest ornaments that a lady can wear on these occasions.

At small dinner parties, low dresses are not so indispensable as they were held to be some years since. High dresses of transparent materials, and low bodices with capes of black lace, are considered sufficiently full dress on these occasions. At large dinners only the fullest dress is appropriate.

Very young ladies should wear but little jewellery. Pearls are deemed most appropriate for the young and unmarried.

Let your jewellery be always the best of its kind. Nothing is so vulgar, either in youth or in age, as the use of false ornaments.

There is as much propriety to be observed in the wearing of jewellery as in the wearing of dresses. Diamonds, pearls, rubies, and all transparent precious stones, belong to evening dress, and should on no account be worn before dinner. In the morning let your rings be of the more simple and massive kind; wear no bracelets; and limit your jewellery to a good brooch, gold chain, and watch. Your diamonds and pearls would be as much out of place during the morning as a low dress, or a wreath.

It is well to remember in the choice of jewellery that mere costliness is not always the test of value; and that an exquisite work of art, such as a fine cameo, or a natural rarity, such as black pearl, is a more *distinguée* possession than a large brilliant which any rich and tasteless vulgarian can buy as easily as yourself. Of all precious stones, the opal is one of the most lovely and least common-place. No vulgar woman purchases an opal. She invariably prefers the more showy ruby, emerald, or sapphire.

A true gentlewoman is always faultlessly neat. No richness of toilette in the afternoon, no diamonds in the evening, can atone for unbrushed hair, a soiled collar, or untidy slippers at breakfast.

Never be seen in the street without gloves. Your gloves should fit to the last degree of perfection.

In these days of public baths and universal progress, we trust that it is unnecessary to do more than hint at the necessity of the most fastidious personal cleanliness. The hair, the teeth, the nails, should be faultlessly kept; and a muslin dress that has been worn once too often, a dingy pocket-handkerchief, or a soiled pair of light gloves, are things to be scru-

pulously avoided by any young lady who is ambitious of preserving the exterior of a gentlewoman.

Remember that the make of your *corsage* is of even greater importance than the make of your dress. No dressmaker can fit you well, or make your bodices in the manner most becoming to your figure, if the *corsage* beneath be not of the best description.

Your shoes and gloves should always be faultless.

Perfumes should be used only in the evening, and then in moderation. Let your perfumes be of the most delicate and *recherché* kind. Nothing is more vulgar than a coarse, ordinary scent; and of all coarse ordinary scents, the most objectionable are musk and patchouli.

Finally, every lady should remember that to dress well is a duty which she owes to society; but that to make it her idol is to commit something worse than a folly. Fashion is made for woman; not woman for fashion.

MORNING AND EVENING PARTIES.

The morning party is a modern invention. It was unknown to our fathers and mothers, and even to ourselves till quite lately. A morning party is given during the months of June, July, August, September, and sometimes October. It begins about two o'clock and ends about seven, and the entertainment consists for the most part of conversation, music, and (if there be a garden) croquet, lawn tennis, archery, etc. The refreshments are given in the form of a *déjeûner à la fourchette*. Receptions are held during the winter season.

Elegant morning dress, general good manners, and some acquaintance with the topics of the day and the games above named, are all the qualifications especially necessary to a lady at a morning party, and "At Homes," music and elocution at receptions.

An evening party begins about nine o'clock p. m., and ends about midnight, or somewhat later. Good-breeding neither demands that you should present yourself at the commencement, nor remain till the close of the evening. You come and go as may be most convenient to you, and by these means are at liberty, during the height of the season when evening parties are numerous, to present yourself at two or three houses during a single evening.

When your name is announced, look for the lady of the house, and pay your respects to her before you even seem to see any other of your friends who may be in the room. At very large and fashionable receptions, the hostess is generally to be found near the door. Should you, however, find

yourself separated by a dense crowd of guests, you are at liberty to recognise those who are near you, and those whom you encounter as you make your way slowly through the throng.

If you are at the house of a new acquaintance and find yourself among entire strangers, remember that by so meeting under one roof you are all in a certain sense made known to one another, and should, therefore, converse freely as equals. To shrink away to a side-table and affect to be absorbed in some album or illustrated work; or, if you find one unlucky acquaintance in the room to fasten upon her like a drowning man clinging to a spar, are *gaucheries* which no shyness can excuse.

If you possess any musical accomplishment, do not wait to be pressed and entreated by your hostess, but comply immediately when she pays you the compliment of inviting you to play or sing. Remember, however, that only the lady of the house has the right to ask you. If others do so, you can put them off in some polite way, but must not comply till the hostess herself invites you.

Be scrupulous to observe silence when any of the company are playing or singing. Remember that they are doing this for the amusement of the rest; and that to talk at such a time is as ill-bred as if you were to turn your back upon a person who was talking to you and begin a conversation with some one else.

If you are yourself the performer, bear in mind that in music, as in speech, "brevity is the soul of wit." Two verses of a song, or four pages of a piece, are at all times enough to give pleasure. If your audience desire more they will ask for it; and it is infinitely more flattering to be encored than to receive the thanks of your hearers, not so much in gratitude for what you have given them, but in relief that you have left off. You should try to suit your music, like your conversation, to your company. A solo of Beethoven's would be as much out of place in some circles as a comic song at a Quakers' meeting. To those who only care for the light popularities of the season, give Verdi, Suppé, Sullivan, or Offenbach. To connoisseurs, if you perform well enough to venture, give such music as will be likely to meet the exigencies of a fine taste. Above all, attempt nothing that you cannot execute with ease and precision.

If the party be of a small and social kind and those games called by the French *les jeux innocents* are proposed, do not object to join in them when invited. It may be that they demand some slight exercise of wit and readiness, and that you do not feel yourself calculated to shine in them; but it is better to seem dull than disagreeable, and those who are obliging

can always find some clever neighbour to assist them in the moment of need.

Impromptu charades are frequently organized at friendly parties. Unless you have really some talent for acting and some readiness of speech, you should remember that you only put others out and expose your own inability by taking part in these entertainments. Of course, if your help is really needed, and you would disoblige by refusing, you must do your best, and by doing it as quietly and coolly as possible, avoid being awkward or ridiculous.

Even though you may take no pleasure in cards, some knowledge of the etiquette and rules belonging to the games most in vogue is necessary to you in society. If a fourth hand is wanted at euchre, or if the rest of the company sit down to a round game, you would be deemed guilty of an impoliteness if you refused to join.

The games most commonly played in society are euchre, draw-poker, and whist.

THE DINNER-PARTY.

To be acquainted with every detail of the etiquette pertaining to this subject is of the highest importance to every lady. Ease, *savoir-faire*, and good-breeding are nowhere more indispensable than at the dinner-table, and the absence of them is nowhere more apparent. How to eat soup and what to do with a cherry-stone are weighty considerations when taken as the index of social status; and it is not too much to say, that a young woman who elected to take claret with her fish, or ate peas with her knife, would justly risk the punishment of being banished from good society.

An invitation to dinner should be replied to immediately, and unequivocally accepted or declined. Once accepted, nothing but an event of the last importance should cause you to fail in your engagement.

To be exactly punctual is the strictest politeness on these occasions. If you are too early you are in the way; if too late you spoil the dinner, annoy the hostess, and are hated by the rest of the guests. Some authorities are even of opinion that in the question of a dinner party "never" is better than "late;" and one author has gone so far as to say, "if you do not reach the house till dinner is served, you had better retire, and send an apology, and not interrupt the harmony of the courses by awkward excuses and cold acceptance."

When the party is assembled, the mistress or master of the house will point out to each gentleman the lady whom he is to conduct to the table.

The lady who is the greatest stranger should be taken down by the master of the house, and the gentleman who is the greatest stranger should conduct the hostess. Married ladies take precedence of single ladies, elder ladies of younger ones, and so forth.

When dinner is announced, the host offers his arm to the lady of most distinction, invites the rest to follow by a few words or a bow, and leads the way. The lady of the house should then follow with the gentleman who is most entitled to that honour, and the visitors follow in the order that has been previously arranged. The lady of the house frequently remains, however, till the last, that she may see her guests go in their prescribed order; but the plan is not a convenient one. It is much better that the hostess should be in her place as the guests enter the dining-room in order that she may indicate their seats to them as they enter, and not find them all crowded together in uncertainty when she arrives.

The plan of cards, with the names of the guests on them, opposite their chairs, is a very useful one.

The lady of the house takes the head of the table. The gentleman who led her down to dinner occupies the seat on her right hand, and the gentleman next in order of precedence, that on her left. The master of the house takes the foot of the table. The lady whom he escorted sits on his right hand, and the lady next in order of precedence on his left.

As soon as you are seated at table, remove your gloves, place your table napkin across your knee, and remove the roll which you will probably find within to the left side of your plate.

The soup should be placed on the table first. All well-ordered dinners begin with soup, whether in summer or winter. The lady of the house should help it, and send it round without asking each individual in turn. It is as much an understood thing as the bread beside each plate, and those who do not choose it are always at liberty to leave it untasted.

In eating soup, remember always to take it from the side of the spoon, and to make no sound in doing so.

If the servants do not go round with wine, the gentlemen should help the ladies and themselves to sherry or sauterne immediately after the soup.

You should never ask for a second supply of either soup or fish; it delays the next course, and keeps the table waiting.

Never offer to "assist" your neighbours to this or that dish. The word is inexpressible vulgar—all the more vulgar for its affectation of elegance. "Shall I send you some mutton?" or "may I help you to canvas back?" is better chosen and better bred.

As a general rule, it is better not to ask your guests if they will partake of the dishes; but to send the plates round, and let them accept or decline them as they please. At very large dinners it is sometimes customary to distribute little lists of the order of the dishes at intervals along the table. It must be confessed that this gives somewhat the air of a dinner at an hotel; but it has the advantage of enabling the visitors to select their fare, and, as "forewarned is forearmed," to keep a corner, as the children say for their favourite dishes.

As soon as you are helped, begin to eat; or, if the viands are too hot for your palate, take up your knife and fork and appear to begin. To wait for others is now not only old-fashioned, but ill-bred.

Never offer to pass on the plate to which you have been helped.

In helping soup, fish, or any other dish, remember that to overfill a plate is as bad as to supply it too scantily.

Silver fish knives will now always be met with at the best tables; but where there are none, a piece of crust should be taken in the left hand, and the fork in the right. There is no exception to this rule in eating fish.

We presume it is scarcely necessary to remind our fair reader that she is never, under any circumstances, to convey her knife to her mouth. Peas are eaten with the fork; tarts, curry, and puddings of all kinds with the spoon.

Always help fish with a fish-slice, and tart and puddings with a spoon, or, if necessary, a spoon and fork.

Asparagus must be helped with the asparagus-tongs.

In eating asparagus, it is well to observe what others do, and act accordingly. Some very well-bred people eat it with the fingers; others cut off the heads, and convey them to the mouth upon the fork. It would be difficult to say which is the more correct.

In eating stone fruit, such as cherries, damsons, etc., the same rule had better be observed. Some put the stones out from the mouth into a spoon and so convey them to the plate. Others cover the lips with the hand, drop them unseen into the palm, and so deposit them on the side of the plate. In our own opinion, the latter is the better way, as it effectually conceals the return of the stones, which is certainly the point of highest importance. Of one thing we may be sure, and that is, that they must never be dropped from the mouth to the plate.

In helping sauce, always pour it on the side of the plate.

If the servants do not go round with the wine (which is by far the best custom) the gentlemen at a dinner-table should take upon themselves the office of helping those ladies who sit near them.

Unless you are a total abstainer, it is extremely uncivil to decline taking wine if you are invited to do so.

It is particularly ill-bred to empty your glass on these occasions.

Certain wines are taken with certain dishes, by old-established custom —as sherry or sauterne, with soup and fish; hock and claret with roast meat; punch with turtle; champagne with sweet-bread or cutlets; port with venison; port or burgundy with game; sparkling wines between the roast and the confectionery; madeira with sweets; port with cheese; and for dessert, port, tokay, madeira, sherry, and claret. Red wines should never be iced, even in summer. Claret and burgundy should always be slightly warmed; claret-cup and champagne should, of course, be iced.

Instead of cooling their wines in the ice-pail, some hosts introduce clear ice upon the table, broken up in small lumps, to be put inside the glasses. This cannot be too strictly reprehended. Melting ice can but weaken the quality and flavour of the wine. Those who desire to drink *wine and water* can ask for iced water if they choose; but it savors too much of economy on the part of a host to insinuate the ice inside the glasses of his guests when the wine could be more effectually iced outside the bottle.

A silver knife and fork should be placed to each guest at dessert.

It is wise never to partake of any dish without knowing of what ingredients it is composed. You can always ask the servant who hands it to you, and you thereby avoid all danger of having to commit the impoliteness of leaving it, and showing that you do not approve of it.

Never speak while you have anything in your mouth.

Be careful never to taste soups or puddings till you are sure they are sufficiently cool; as, by disregarding this caution, you may be compelled to swallow what is dangerously hot, or be driven to the unpardonable alternative of returning it to your plate.

When eating or drinking, avoid every kind of audible testimony to the fact.

Finger-glasses, containing water slightly warmed and perfumed, are placed to each person at dessert. In these you may dip the tips of your fingers, wiping them afterwards on your table-napkin. If the finger-glass and doyley are placed on your dessert-plate, you should immediately remove the doyley to the left of your plate, and place the finger-glass upon it. By these means you leave the right for the wine-glasses.

Be careful to know the shapes of the various kinds of wine-glasses commonly in use, in order that you may never put forward one for another.

High and narrow, and very broad and shallow glasses, are used for champagne; large goblet-shaped glasses for burgundy and claret; ordinary wine-glasses for sherry and madeira; green glasses for hock; and somewhat large, bell-shaped glasses for port.

Port, sherry, and madeira are decanted. Hocks and champagnes appear in their native bottles. Claret and burgundy are handed round in a claret-jug.

The servants leave the room when the dessert is on the table.

Coffee and liqueurs should be handed round when the dessert has been about a quarter of an hour on the table. After this the ladies generally retire.

The lady of the house should never send away her plate, or appear to have done eating, till all her guests have finished.

If you should unfortunately overturn or break anything, do not apologize for it. You can show your regret in your face, but it is not well-bred to put it into words.

To abstain from taking the last piece on the dish, or the last glass of wine in the decanter, only because it is the last, is highly ill-bred. It implies a fear on your part that the vacancy cannot be supplied, and almost conveys an affront to your host.

To those ladies who have houses and servants at command, we have one or two remarks to offer. Every housekeeper should be acquainted with the routine of a dinner and the etiquette of a dinner-table. No lady should be utterly dependent on the taste and judgment of her cook. Though she need not know how to dress a dish, she should be able to judge of it when served. The mistress of the house, in short, should be to a cook what a publisher is to his authors—that is to say, competent to form a judgment upon their works, though himself incapable of writing even a magazine article.

If you wish to have a good dinner, and do not know in what manner to set about it, you will do wisely to order it from some first-rate *restaurateur*. By these means you insure the best cookery and a faultless *carte*.

Bear in mind that it is your duty to entertain your friends in the best manner that your means permit. This is the least you can do to recompense them for the expenditure of time and money which they incur in accepting your invitation.

"To invite a friend to dinner," says Brillat Savarin, "is to become responsible for his happiness so long as he is under your roof."

A dinner, to be excellent, need not consist of a great variety of dishes; but everything should be of the best, and the cookery should be perfect.

That which should be cool should be cool as ice; that which should be hot should be smoking; the attendance should be rapid and noiseless; the guests well assorted; the wines of the best quality; the host attentive and courteous; the room well lighted, and the time punctual.

Every dinner should begin with soup, be followed by fish, and include some kind of game. "The soup is to the dinner," we are told by Grisnod de la Regnière, "what the portico is to a building, or the overture to an opera."

To this aphorism we may be permitted to add that a *chasse* of cognac or curaçoa at the close of a dinner is like the epilogue at the end of a comedy.

Never reprove or give directions to your servants before guests. If a dish is not placed precisely where you would have wished it to stand, or the order of a course is reversed, let the error pass unobserved by yourself, and you may depend that it will be unnoticed by others.

The duties of hostess at a dinner-party are not onerous; but they demand tact and good breeding, grace of bearing, and self-possession of no ordinary degree. She does not often carve. She has no active duties to perform; but she must neglect nothing, forget nothing, put all her guests at their ease, encourage the timid, draw out the silent, and pay every possible attention to the requirements of each and all around her. No accident must ruffle her temper. No disappointment must embarrass her. She must see her old china broken without a sigh, and her best glass shattered with a smile.

STAYING AT A FRIEND'S HOUSE—BREAKFAST, LUNCHEON, ETC.

A visitor is bound by the laws of social intercourse to conform in all respects to the habits of the house. In order to do this effectually, she should inquire, or cause her personal servant to inquire, what those habits are. To keep your friend's breakfast on the table till a late hour; to delay the dinner by want of punctuality; to accept other invitations, and treat his house as if it were merely an hotel to be slept in; or to keep the family up till unwonted hours, are alike evidences of a want of good feeling and good-breeding.

At breakfast and lunch absolute punctuality is not imperative; but a visitor should avoid being always the last to appear at table.

No order of precedence is observed at either breakfast or luncheon. Persons take their seats as they come in, and, having exchanged their

morning salutations, begin to eat without waiting for the rest of the party.

If letters are delivered to you at breakfast or luncheon, you may read them by asking permission from the lady who presides at the urn.

Always hold yourself at the disposal of those in whose house you are visiting. If they propose to ride, drive, walk, or otherwise occupy the day, you may take it for granted that these plans are made with reference to your enjoyment. You should, therefore, receive them with cheerfulness, enter into them with alacrity, and do your best to seem pleased, and be pleased, by the efforts which your friends make to entertain you.

You should never take a book from the library to your own room without requesting permission to borrow it. When it is lent, you should take every care that it sustains no injury while in your possession, and should cover it, if necessary.

A guest should endeavour to amuse herself as much as possible, and not be continually dependent on her hosts for entertainment. She should remember that, however welcome she may be, she is not always wanted.

A visitor should avoid giving unnecessary trouble to the servants of the house.

The signal for retiring to rest is generally given by the appearance of the servant with wine, water, and biscuits, where a late dinner hour is observed, and suppers are not the custom. This is the last refreshment of the evening, and the visitor will do well to rise and wish good night shortly after it has been partaken of by the family.

GENERAL HINTS.

Do not frequently repeat the name of the person with whom you are conversing. It implies either the extreme of *hauteur* or familiarity.

Never speak of absent persons by only their Christian or surnames; but always as Mr. ——, or Mrs. ——. Above all, never name anybody by the first letter of his name. Married people are sometimes guilty of this flagrant offence against taste.

Look at those who address you.

Never boast of your birth, your money, your grand friends, or anything that is yours. If you have travelled, do not introduce that information into your conversation at every opportunity. Any one can travel with money and leisure. The real distinction is to come home with enlarged views, improved tastes, and a mind free from prejudice.

If you present a book to a friend, do not write his or her name in it, unless requested. You have no right to presume that it will be rendered

any the more valuable for that addition; and you ought not to conclude beforehand that your gift will be accepted.

Never undervalue the gift which you are yourself offering; you have no business to offer it if it is valueless. Neither say that you do not want it yourself, or that you should throw it away if it were not accepted, etc., etc. Such apologies would be insults if true, and mean nothing if false.

No compliment that bears insincerity on the face of it, is a compliment at all.

Presents made by a married lady to a gentleman can only be offered in the joint names of her husband and herself.

Married ladies may occasionally accept presents from gentlemen who visit frequently at their houses, and who desire to show their sense of the hospitality which they receive there.

Acknowledge the receipt of a present without delay.

Give a foreigner his name in full, as Monsieur de Vigny—never as *Monsieur* only. In speaking of him, give him his title, if he has one.

Converse with a foreigner in his own language. If not competent to do so, apologize, and beg permission to speak English.

To get in and out of a carriage gracefully is a simple but important accomplishment. If there is but one step, and you are going to take the seat facing the horses, put your left foot on the step, and enter the carriage with your right, in such a manner as to drop at once into your seat. If you are about to sit with your back to the horses, reverse the process. As you step into the carriage, be careful to keep your back towards the seat you are about to occupy, so as to avoid the awkwardness of turning when you are once in.

"ANGLING."

Etiquette for Gentlemen.

INTRODUCTIONS.

TO introduce persons who are mutually unknown is to undertake a serious responsibility, and to certify to each the respectability of the other. Never undertake this responsibility without in the first place asking yourself whether the persons are likely to be agreeable to each other; nor, in the second place, without ascertaining whether it will be acceptable to both parties to become acquainted.

Always introduce the gentleman to the lady—never the lady to the gentleman. The chivalry of etiquette assumes that the lady is invariably the superior in right of her sex, and that the gentleman is honoured by the introduction.

Never present a gentleman to a lady without first asking her permission to do so.

When you are introduced to a lady, never offer your hand. When introduced, persons limit their recognition of each other with a bow.

Persons who have met at the house of a mutual friend without being introduced, should not bow if they afterwards meet elsewhere; a bow implies acquaintance, and persons who have not been introduced are not acquainted.

If you are walking with one friend, and presently meet with, or are joined by, a second, do not commit the too frequent error of introducing them to each other. You have even less right to do so than if they encountered each other at your house during a morning call.

There are some exceptions to the etiquette of introductions. At a ball or evening party, where there is dancing, the mistress of the house may introduce any gentleman to any lady without first asking the lady's permission. But she should first ascertain whether the lady is willing to dance; and this out of consideration for the gentleman, who may otherwise be refused. No man likes to be refused the hand of a lady, though it be only for a quadrille.

A brother may present his sister, or a father his son, without any kind of preliminary: but only when there is no inferiority on the part of his own family to that of the acquaintance.

Friends may introduce friends at the house of a mutual acquaintance, but, as a rule, it is better to be introduced by the mistress of the house. Such an introduction carries more authority with it.

Introductions at evening parties are now almost wholly dispensed with. Persons who meet at a friend's house are ostensibly upon an equality, and pay a bad compliment to the host by appearing suspicious and formal. Some old-fashioned country hosts yet persevere in introducing each newcomer to all the assembled guests. It is a custom that cannot be too soon abolished, and one that places the last unfortunate visitor in a singularly awkward position. All that he can do is to make a semicircular bow, like a concert singer before an audience, and bear the general gaze with as much composure as possible.

If, when entering the drawing-room, your name has been wrongly announced, or has passed unheard in the buzz of conversation, make your way at once to the mistress of the house, if you are a stranger, and introduce yourself by name. This should be done with the greatest simplicity, and your professional or titular rank made as little of as possible.

An introduction given at a ball for the mere purpose of conducting a lady through a dance does not give the gentleman any right to bow to her on a future occasion. If he commits this error, he must remember that she is not bound to see or return his salutation.

LETTERS OF INTRODUCTION.

Do not lightly give or promise letters of introduction. Always remember that when you give a letter of introduction you lay yourself under an obligation to the friend to whom it is addressed.

No one delivers a letter of introduction in person. It places you in the most undignified position imaginable, and compels you to wait while it is being read, like a footman who has been told to wait for an answer.

If, on the other hand, a stranger sends you a letter of introduction and his card, you are bound by the laws of politeness and hospitality, not only to call upon him the next day, but to follow up that attention with others. If you are in a position to do so, the most correct proceeding is to invite him to dine with you. Should this not be within your power, you have probably the *entrée* to some private collections, club-houses, theatres, or reading-rooms, and could devote a few hours to showing him these places.

A letter of introduction should be given unsealed, not alone because your friend may wish to know what you have said of him, but also as a guarantee of your own good faith. As you should never give such a letter unless you can speak highly of the bearer, this rule of etiquette is easy to observe. By requesting your friend to fasten the envelope before forwarding the letter to its destination you tacitly give him permission to inspect its contents.

Let your note paper be of the best quality and proper size.

VISITING—MORNING CALLS—CARDS.

A morning visit should be paid between the hours of 2 and 4 P.M. in winter, and 2 and 5 in summer.

Visits of ceremony should be short. If even your conversation should become animated, beware of letting your call exceed half an hour's length. It is always better to let your friends regret rather than desire your withdrawal.

On returning visits of ceremony you may, without impoliteness, leave your card at the door without going in. Do not fail, however, to inquire if the family be well.

Should there be daughters or sisters residing with the lady upon whom you call, you may turn down a corner of your card, to signify that the visit is paid to all. It is in better taste, however, to leave cards for each.

Unless when returning thanks for "kind inquiries," or announcing your arrival in, or departure from, town, it is not considered respectful to send cards round by a servant.

Leave-taking cards have P.P.C. (*pour prendre conge*) written in the corner. Some use P.D.A. (*pour dire adieu*).

The visiting cards of gentlemen are half the size of those used by ladies.

Visits of condolence are paid within the week after the event which occasions them. Personal visits of this kind are made by relations and very intimate friends only. Acquaintances should leave cards with narrow mourning borders.

On the first occasion, when you are received by the family after the death of one of its members, it is etiquette to wear slight mourning.

When a gentleman makes a morning call, he should never leave his hat or riding-whip in the hall, but should take both into the room. To do otherwise would be to make himself too much at home. The hat, however, must never be laid on a table, piano, or any article of furniture, it

should be held gracefully in the hand. If you are compelled to lay it aside put it on the floor.

Umbrellas should invariably be left in the hall.

Never take favourite dogs into a drawing-room when you make a morning call. Their feet may be dusty, or they may bark at the sight of strangers, or, being of too friendly a disposition, may take the liberty of lying on a lady's gown, or jumping on the sofas and easy chairs. Where your friend has a favourite cat already established before the fire, a battle may ensue, and one or both of the pets be seriously hurt. Besides, many persons have a constitutional antipathy to dogs, and others never allow their own to be seen in the sitting-rooms. For all or any of those reasons, a visitor has no right to inflict upon his friend the society of his dog as well as of himself.

If, when you call upon a lady, you meet a lady visitor in her drawing-room, you should rise when that lady takes her leave.

If other visitors are announced, and you have already remained as long as courtesy requires, wait till they are seated, and then rise from your chair, take leave of your hostess, and bow politely to the newly-arrived guests. You will, perhaps, be urged to remain, but, having once risen, it is always best to go. There is always a certain air of *gaucherie* in resuming your seat and repeating the ceremony of leave-taking.

If you have occasion to look at your watch during a call, ask permission to do so, and apologize for it on the plea of other appointments.

CONVERSATION.

Let your conversation be adapted as skilfully as may be to your company. Some men make a point of talking commonplace to all ladies alike, as if a woman could only be a trifler. Others, on the contrary, forget in what respects the education of a lady differs from that of a gentleman, and commit the opposite error of conversing on topics with which ladies are seldom acquainted. A woman of sense has as much right to be annoyed by the one, as a lady of ordinary education by the other. You cannot pay a finer compliment to a woman of refinement and *esprit* than by leading the conversation into such a channel as may mark your appreciation of her superior attainments.

In talking with ladies of ordinary education, avoid political, scientific or commercial topics, and choose only such subjects as are likely to be of interest to them.

Remember that people take more interest in their own affairs than in anything else which you can name. If you wish your conversation to be

thoroughly agreeable, lead a mother to talk of her children, a young lady of her last ball, an author of his forthcoming book, or an artist of his exhibition picture. Having furnished the topic, you need only listen and you are sure to be thought not only agreeable but thoroughly sensible and well-informed.

Be careful, however, on the other hand, not always to make a point of talking to persons upon general matters relating to their professions. To show an interest in their immediate concerns is flattering; but to converse with them too much about their own arts looks as if you thought them ignorant of other topics.

Do not use a classical quotation in the presence of ladies without apologizing for, or translating, it. Even this should only be done when no other phrase would so aptly express your meaning. Whether in the presence of ladies or gentlemen, much display of learning is pedantic and out of place.

There is a certain distinct but subdued tone of voice which is peculiar to only well-bred persons. A loud voice is both disagreeable and vulgar. It is better to err by the use of too low rather than too loud a tone.

Remember that all "slang" is vulgar.

Do not pun. Puns unless they rise to the rank of witticisms, are to be scrupulously avoided.

Long arguments in general company, however entertaining to the disputants, are tiresome to the last degree to all others. You should always endeavour to prevent the conversation from dwelling too long upon one topic.

Religion is a topic which should never be introduced in society. It is the one subject on which persons are most likely to differ, and least able to preserve temper.

Never interrupt a person who is speaking.

To listen well, is almost as great an art as to talk well. It is not enough *only* to listen. You must endeavour to seem interested in the conversation of others.

It is considered extremely ill-bred when persons whisper in society, or converse in a language in which all present are not familiar. If you have private matters to discuss you should appoint a proper time and place to do so, without paying others the ill compliment of excluding them from your conversation.

If a foreigner be one of the guests at a small party, and does not understand English sufficiently to follow what is said, good-breeding demands

that the conversation shall be carried on in his own language. If at a dinner party, the same rule applies to those at his end of the table.

If upon the entrance of a visitor you carry on the thread of a previous conversation, you should briefly recapitulate to him what has been said before he arrived.

Always look, but never stare, at those with whom you converse.

In order to meet the general needs of conversation in society, it is necessary that a man should be well acquainted with the current news and historical events of at least the last few years.

Never talk upon subjects of which you know nothing, unless it be for the purpose of acquiring information. Many young men imagine that because they frequent exhibitions and operas they are qualified judges of art. No mistake is more egregious or universal.

Those who introduce anecdotes into their conversation are warned that these should invariably be "short, witty, eloquent, new, and not far-fetched."

Scandal is the least excusable of all conversational vulgarities.

In conversing with a man of rank, do not too frequently give him his title.

THE PROMENADE.

A well-bred man must entertain no respect for the brim of his hat. "A bow," says La Fontaine, "is a note drawn at sight." You are bound to acknowledge it immediately, and to the full amount. True politeness demands that the hat should be quite lifted from the head.

On meeting friends with whom you are likely to shake hands remove your hat with the left hand in order to leave the right hand free.

If you meet a lady in the street whom you are sufficiently intimate to address, do not stop her, but turn round and walk beside her in whichever direction she is going. When you have said all that you wish to say, you can take your leave.

If you meet a lady with whom you are not particularly well acquainted, wait for her recognition before you venture to bow to her.

In bowing to a lady whom you are not going to address, lift your hat with that hand which is farthest from her. For instance, if you pass her on the right side, use your left hand; if on the left, use your right.

If you are on horseback and wish to converse with a lady who is on foot, you must dismount and lead your horse, so as not to give her the fatigue of looking up to your level. Neither should you subject her to the impropriety of carrying on a conversation in a tone necessarily louder than is sanctioned in public by the laws of good breeding.

When you meet friends or acquaintances in the streets, at the exhibitions, or any public places, take care not to pronounce their names so loudly as to attract the attention of the passers-by. Never call across the street; and never carry on a dialogue in a public vehicle, unless your interlocutor occupies the seat beside your own.

In walking with a lady take charge of any small parcel, parasol, or book with which she may be encumbered.

DRESS.

A gentleman should always be so well dressed that his dress shall never be observed at all. Does this sound like an enigma? It is not meant for one. It only implies that perfect simplicity is perfect elegance, and that the true test of taste in the toilet of a gentleman is its entire harmony, unobtrusiveness, and becomingness. If any friend should say to you, "What a handsome waistcoat you have on!" you may depend that a less handsome waistcoat would be in better taste. If you hear it said that Mr. So and-So wears superb jewellery, you may conclude beforehand that he wears too much. Display, in short, is ever to be avoided, especially in matters of dress. The toilet is the domain of the fair sex. Let a wise man leave its graces and luxuries to his wife, daughters, or sisters, and seek to be himself appreciated for something of higher worth than the stud in his shirt or the trinkets on his chain.

To be too much in the fashion is as vulgar as to be too far behind it. No really well-bred man follows every new cut that he sees in his tailor's fashion-book.

In the morning wear frock coats, double-breasted waistcoats, and trousers of light or dark colours, according to the season.

In the evening, though only in the bosom of your own family, wear only black, and be as scrupulous to put on a dress coat as if you expected visitors. If you have sons, bring them up to do the same. It is the observance of these minor trifles in domestic etiquette which marks the true gentleman.

For evening parties, dinner parties, and balls, wear a black dress coat, black trousers, black silk or cloth waistcoat, white cravat, white or grey kid gloves, and thin patent leather boots. A black cravat may be worn in full dress, but is not so elegant as a white one.

Let your jewellery be of the best, but the least gaudy description, and wear it very sparingly. A single stud, a gold watch and guard, and one handsome ring, are as many ornaments as a gentleman can wear with propriety.

It is well to remember in the choice of jewellery that mere costliness is not always the test of value; and that an exquisite work of art, such as a fine cameo, or a natural rarity, such as a black pearl, is a more *distingué* possession than a large brilliant, which any rich and tasteless vulgarian can buy as easily as yourself. For a ring, the gentleman of fine taste would prefer a precious antique *intaglio* to the handsomest diamond or ruby that could be bought at Tiffany's.

Of all precious stones, the opal is one of the most lovely and the least commonplace. No vulgar man purchases an opal. He invariably prefers the more showy diamond, ruby, sapphire, or emerald.

Unless you are a snuff-taker, never carry any but a white pocket-handkerchief.

In the morning you wear a long cravat fastened by a pin, be careful to avoid what may be called *alliteration* of colour. We have seen a turquoise pin worn in a violet-coloured cravat, and the effect was frightful. Choose, if possible, complementary colours, and their secondaries. For instance, if the stone in your pin be torquoise, wear it with brown, or crimson mixed with black, or black and orange. If a ruby, contrast it with shades of green. The same rule holds good with regard to the mixture and contrast of colours in your waistcoat and cravat. Thus, a buff waistcoat and blue tie, or brown and blue, or brown and green, or brown and magenta, green and magenta, green and mauve, are all good arrangements of colour.

Coloured shirts may be worn in the morning, but they should be small in pattern and quiet in colour.

In these days of public baths and universal progress, we trust that it is unnecessary to do more than hint at the necessity of the most fastidious personal cleanliness. The hair, the teeth, the nails, should be faultlessly kept; and a soiled shirt, a dingy pocket-handkerchief, or a light waistcoat that has been worn once too often, are things to be scrupulously avoided by any man who is ambitious of preserving the exterior of a gentleman.

RIDING AND DRIVING.

Riding, as in walking, give the lady the wall.

If you assist a lady to mount, hold your hand at a convenient distance from the ground that she may place her foot in it. As she springs, you aid her by the impetus of your hand. In doing this, it is always better to agree upon a signal, that her spring and your assistance may come at the same moment.

For this purpose there is no better form than the old duelling one of "one, two, *three*."

When the lady is in the saddle, it is your place to find the stirrup for her, and guide her left foot to it. When this is done, she rises in her seat and you assist her to draw her habit straight.

Even when a groom is present, it is more polite for the gentleman himself to perform this office for his fair companion; as it would be more polite for him to hand her a chair than to have it handed by a servant.

If the lady be light, you must take care not to give her too much impetus in mounting. We have known a lady nearly thrown over her horse by a misplaced zeal of this kind.

If the gate has to be opened, we need hardly observe that it is your place to hold it open till the lady has passed through.

In driving, a gentleman places himself with his back to the horses, and leaves the best seat for the ladies.

When the carriage stops, the gentleman should alight first, in order to assist the lady.

To get in and out of a carriage gracefully is a simple but important accomplishment. If there is but one step, and you are going to take your seat facing the horses, put your left foot on the step, and enter the carriage with your right in such a manner as to drop at once into your seat. If you are about to sit with your back to the horses, reverse the process. As you step into the carriage be careful to keep your back towards the seat you are about to occupy, so as to avoid the awkwardness of turning when you are once in.

A gentleman cannot be too careful to avoid stepping on ladies' dresses when he gets in or out of a carriage. He should also beware of shutting them in with the door.

MORNING AND EVENING PARTIES.

Elegant morning dress, general good manners, and some acquaintance with the topics of the day and the games above named, are all the qualifications especially necessary to a gentleman at a morning party.

An evening party begins about nine o'clock P.M., and ends about midnight, or somewhat later. Good breeding neither demands that you should present yourself at the commencement nor remain till the close of the evening. You come and go as may be most convenient for you, and by these means are at liberty, during the height of the season when even-

ing parties are numerous, to present yourself at two or three houses during a single evening.

At very large and fashionable receptions, the hostess is generally to be found near the door. Should you, however, find yourself separated by a dense crowd of guests, you are at liberty to recognise those who are near you, and those whom you encounter as you make your way slowly through the throng.

If you are at the house of a new acquaintance and find yourself among entire strangers, remember that by so meeting under one roof you are all in a certain sense made known to one another, and should therefore converse freely, as equals. To shrink away to some side-table and affect to be absorbed in some album or illustrated work; or, if you find one unlucky acquaintance in the room, to fasten upon him like a drowning man clinging to a spar, are *gaucheries* which no shyness can excuse. An easy and unembarrassed manner, and the self-possession requisite to open a conversation with those who happen to be near you, are the indispensable credentials of a well-bred man.

At an evening party, do not remain too long in one spot. To be afraid to move from one drawing-room to another is the sure sign of a neophyte in society.

If you have occasion to use your handkerchief, do so as noiselessly as possible. To blow your nose as if it were a trombone, or to turn your head aside when using your handkerchief, are vulgarities scrupulously to be avoided.

Never stand upon the hearth with your back to the fire or stove, either in a friend's house or your own.

Never offer anyone the chair from which you have just risen, unless there is no other disengaged.

If, when supper is announced, no lady has been specially placed under your care by the hostess, offer your arm to whichever lady you may have last conversed with.

If you possess any musical accomplishments, do not wait to be pressed and entreated by your hostess, but comply immediately when she pays you the compliment of inviting you to play or sing. Remember, however, that only the lady of the house has the right to ask you. If others do so, you can put them off in some polite way; but must not comply till the hostess herself invites you.

If you sing comic songs, be careful that they are of the most unexceptionable kind, and likely to offend neither the tastes nor prejudices of the society in which you find yourself.

If the party be of a small and social kind, and those games called by the French *les jeux innocents* are proposed, do not object to join in them when invited. It may be that they demand some slight exercise of wit and readiness, and that you do not feel yourself calculated to shine in them; but it is better to seem dull than disagreeable, and those who are obliging can always find some clever neighbour to assist them in the moment of need. The game of "consequences" is one which unfortunately gives too much scope to liberty of expression. If you join in this game, we cannot too earnestly enjoin you never to write down one word which the most pure-minded woman present might not read aloud without a blush. Jests of an equivocal character are not only vulgar, but contemptible.

Impromptu charades are frequently organized at friendly parties. Unless you have really some talent for acting and some readiness of speech, you should remember that you only put others out and expose your own inability by taking part in these entertainments. Of course, if your help is really needed and you would disoblige by refusing, you must do your best, and by doing it as quietly and coolly as possible, avoid being awkward or ridiculous.

Should an impromptu polka or quadrille be got up after supper at a party where no dancing was intended, be sure not to omit putting on gloves before you stand up. It is well always to have a pair of white gloves in your pocket in case of need; but even black are better under these circumstances than none.

Even though you may take no pleasure in cards, some knowledge of the etiquette and rules belonging to the games most in vogue is necessary to you in society.

Never let even politeness induce you to play for high stakes. Etiquette is the minor morality of life; but it never should be allowed to outweigh the higher code of right and wrong.

Be scrupulous to observe silence when any of the company are playing or singing. Remember that they are doing this for the amusement of the rest; and that to talk at such a time is as ill-bred as if you were to turn your back upon a person who was talking to you, and begin a conversation with someone else.

If you are yourself the performer, bear in mind that in music, as in speech, "brevity is the soul of wit." Two verses of a song, or four pages of a piece, are at all times enough to give pleasure. If your audience desire more they will ask for it; and it is infinitely more flattering to be encored than to receive the thanks of your hearers, not so much in grati-

tude for what you have given them, but in relief that you have left off. You should try to suit your music, like your conversation, to your company. A solo of Beethoven's would be as much out of place in some circles as a comic song at a Quaker's meeting. To those who only care for the light popularities of the season, give Verdi. To connoisseurs, if you perform well enough to venture, give such music as will be likely to meet the exigencies of a fine taste. Above all, attempt nothing that you cannot execute with ease and precision.

In retiring from a crowded party it is unnecessary that you should seek out the hostess for the purpose of bidding her a formal good-night. By doing this you would, perhaps, remind others that it was getting late, and cause the party to break up. If you meet the lady of the house on your way to the drawing-room door, take your leave of her as unobstrusively as possible, and slip away without attracting the attention of her other guests.

THE DINNER TABLE.

To be acquainted with every detail of the etiquette pertaining to this subject is of the highest importance to every gentleman. Ease, *savoir faire*, and good-breeding are nowhere more indispensable than at the dinner-table, and the absence of them is nowhere more apparent.

An invitation to dine should be replied to immediately, and unequivocally accepted or declined. Once accepted, nothing but an event of the last importance should cause you to fail in your engagement.

To be exactly punctual is the strictest politeness on these occasions. If you are too early, you are in the way; if too late, you spoil the dinner, annoy the hostess, and are hated by the rest of the guests. Some authorities are even of opinion that in the question of a dinner party, "never" is better than "late"; and one author has gone so far as to say, "if you do not reach the house till dinner is served, you had better retire to a restaurateur's, and thence send an apology, and not interrupt the harmony of the courses by awkward excuses and cold acceptance."

When the party is assembled, the mistress or master of the house will point out to each gentleman the lady whom he is to conduct to the table. If she be a stranger, you had better seek an introduction; if a previous acquaintance, take care to be near her when the dinner is announced; offer your arm, and go down according to precedence. This order of precedence must be arranged by the host or hostess.

When the dinner is announced, the host offers his arm to the lady of most distinction, invites the rest to follow by a few words or a bow, and

leads the way. The lady of the house should then follow with the gentleman who is most entitled to that honour, and the visitors follow in the order that the master of the house has previously arranged. The lady of the house frequently remains however, till the last, that she may see her guests go down in the prescribed order; but the plan is not a convenient one. It is much better that the hostess should be in her place as the guests enter the dining-room, in order that she may indicate their seats to them as they come in, and not find them all crowded together in uncertainty when she arrives. If cards with names are on the table seek that of the lady whom you have taken to dinner.

The number of guests at a dinner-party should always be determined by the size of the table. When the party is too small, conversation flags, and a general air of desolation pervades the table. When they are too many, everyone is inconvenienced. A space of two feet should be allowed to each person. It is well to arrange a party in such wise that the number of ladies and gentlemen be equal.

The lady of the house takes the head of the table. The gentleman who led her down to dinner occupies the seat on her right hand, and the gentleman next in order of precedence that on her left. The master of the house takes the foot of the table. The lady whom he escorted sits on his right hand, and the lady next in order of precedence on his left.

The gentlemen who support the lady of the house should offer to relieve her of the duties of hostess. Many ladies are well pleased thus to delegate the difficulties of carving, and all gentlemen who accept invitations to dinner should be prepared to render such assistance when called upon. To offer to carve a dish, and then perform the office unskilfully, is an unpardonable *gaucherie*. Every gentleman should carve, and carve well.

As soon as you are seated at the table, remove your gloves, place your table napkin across your knees, and remove the roll which you find probably within it to the left side of your plate.

The soup should be placed on the table first.

In eating soup, remember always to take it from the side of the spoon, and to make no sound in doing so.

If the servants do not go round with wine the gentlemen should help the ladies and themselves to sherry or sauterne immediately after the soup.

You should never ask for a second supply of either soup or fish; it delays the next course and keeps the table waiting.

Never offer to "assist" your neighbours to this or that dish. The word is inexpressibly vulgar—all the more vulgar for its affectation of elegance.

"Shall I send you some mutton?" or "may I help you to canvas-back?" is better chosen and better bred.

If you are asked to take wine, it is polite to select the same as that which your interlocutor is drinking. If you invite a lady to take wine, you should ask her which she will prefer, and then take the same yourself. Should you, however, for any reason prefer some other vintage, you can take it by courteously requesting her permission.

As soon as you are helped, begin to eat; or, if the viands are too hot for your palate, take up your knife and fork and appear to begin. To wait for others is now not only old-fashioned, but ill-bred.

Never offer to pass on the plate to which you have been helped.

In helping soup, fish, or any other dish, remember that to overfill a plate is as bad as to supply it too scantily.

Silver fish-knives will now always be met with at the best tables; but where there are none, a piece of crust should be taken in the left hand, and the fork in the right. There is no exception to this rule in eating fish.

We presume it is scarcely necessary to remind the reader that he is never, under any circumstances, to convey his knife to his mouth. Peas are eaten with the fork; tarts, curry, and puddings of all kinds with the spoon.

Always help fish with a fish-slice, and tart and puddings with a spoon, or, if necessary, a spoon and fork.

Asparagus must be helped with the asparagus-tongs.

In eating asparagus, it is well to observe what others do, and act accordingly. Some very well-bred people eat it with the fingers; others cut off the heads, and convey them to the mouth upon the fork. It would be difficult to say which is the more correct.

In eating stone fruit, such as cherries, damsons, etc., the same rule had better be observed. Some put the stones out from the mouth into a spoon, and so convey them to the plate. Others cover the lips with the hand, drop them unseen into the palm, and so deposit them on the side of the plate. In our own opinion, the latter is the better way, as it effectually conceals the return of the stones, which is certainly the point of highest importance. Of one thing we may be sure, and that is, that they must never be dropped from the mouth to the plate.

In helping sauce, always pour it on the side of the plate.

If the servants do not go round with the wine (which is by far the best custom), the gentlemen at a dinner table should take upon themselves the office of helping those ladies who sit near them. Ladies take more wine

in the present day than they did fifty years ago, and gentlemen should remember this, and offer it frequently. Ladies cannot very well ask for wine, but they can always decline it. At all events they do not like to be neglected, or to see gentlemen liberally helping themselves, without observing whether their fair neighbour's glasses are full or empty.

The habit of taking wine with each other has almost wholly gone out of fashion. A gentleman may ask the lady whom he conducted down to dinner, or he may ask the lady of the house to take wine with him. But even these last remnants of the old custom are fast falling into disuse.

Unless you are a total abstainer, it is extremely uncivil to decline taking wine if you are invited to do so. In accepting, you have only to pour a little fresh wine into your glass, look at the person who invited you, bow slightly, and take a sip from the glass.

It is particularly ill-bred to empty your glass on these occasions.

Certain wines are taken with certain dishes, by old-established custom—as sherry or sauterne, with soup and fish; hock and claret, with roast meat; punch with turtle; champagne with sweet-bread and cutlets; port with venison; port or burgundy, with game; sparkling wines between the roast and the confectionery; madeira with sweets; port with cheese; and for dessert, port, tokay, madeira, sherry and claret. Red wines should never be iced, even in summer. Claret and burgundy should always be slightly warmed; claret-cup and champagne cup should, of course, be iced.

Instead of cooling their wines in the ice pail, some hosts introduce clear ice upon the table, broken up in small lumps, to be put inside the glasses. This cannot be too strongly reprehended. Melting ice can but weaken the quality and flavour of the wine. Those who desire to drink *wine and water*, can ask for iced water if they choose, but it savours too much of economy on the part of the host to insinuate the ice inside the glasses of his guests when the wine could be more effectually iced outside the bottle.

A silver knife and fork should be placed to each guest at dessert.

If you are asked to prepare fruit for a lady, be careful to do so by means of the silver knife and fork only, and never to touch it with your fingers.

It is wise never to partake of any dish without knowing of what ingredients it is composed. You can always ask the servant who hands it to you, and you thereby avoid all danger of having to commit the impoliteness of leaving it, and showing that you do not approve of it.

Never speak while you have anything in your mouth.

Be careful never to taste soups or puddings till you are sure they are sufficiently cool; as, by disregarding this caution, you may be compelled

to swallow what is dangerously hot, or be driven to the unpardonable alternative of returning it to your plate.

When eating or drinking, avoid every kind of audible testimony to the fact.

Finger-glasses, containing water slightly warmed and perfumed, are placed to each person at dessert. In these you may dip the tips of your fingers, wiping them afterwards on your table-napkin. If the finger-glass and doyley are placed on your dessert-plate, you should immediately remove the doyley to the left of your plate, and place the finger-glass upon it. By these means you leave the right for the wine-glasses.

Be careful to know the shapes of the various kinds of wine-glasses commonly in use, in order that you may never put forward one for another. High and narrow, and very broad and shallow glasses, are used for champagne; large, goblet-shaped glasses for burgundy and claret; ordinary wine-glasses for sherry and madeira; green glasses for hock; and somewhat large, bell-shaped glasses for port.

Port, sherry, and madeira are decanted. Hock and champagnes appear in their native bottles. Claret and burgundy are handed around in a claret jug.

Coffee and liqueurs should be handed round when the dessert has been about a quarter of an hour on the table. After this, the ladies generally retire.

Should no servant be present to do so, the gentleman who is nearest the door should hold it for the ladies to pass through.

When the ladies are leaving the dining-room, the gentlemen all rise in their places, and do not resume their seats till the last lady is gone.

If you should unfortunately overturn or break anything, do not apologize for it. You can show your regret in your face, but it is not well-bred to put it into words.

Should you injure a lady's dress, apologize amply, and assist her, if possible, to remove all traces of the damage.

To abstain from taking the last piece on the dish, or the last glass of wine in the decanter, only because it is the last, is highly ill-bred. It implies a fear that the vacancy cannot be supplied, and almost conveys an affront to your host.

In summing up the little duties and laws of the table, a popular author has said that—"The chief matter of consideration at the dinner-table—as, indeed, everywhere else in the life of a gentleman—is to be perfectly composed and at his ease. He speaks deliberately; he performs the most important act of the day as if he were performing the most ordinary. Yet

there is no appearance of trifling or want of gravity in his manner, he maintains the dignity which is so becoming on so vital an occasion. He performs all the ceremonies, yet in the style of one who performs no ceremonies at all. He goes through all the complicated duties of the scene as if he were 'to the manner born.'"

To the giver of a dinner we have but one or two remarks to offer. If he be a bachelor, he had better give his dinner at a good hotel. If a married man, he will, we presume, enter into council with his wife and his cook. In any case, however, he should always bear in mind that it is his duty to entertain his friends in the best manner that his means permit; and that this is the least he can do to recompense them for the expenditure of time and money which they incur in accepting his invitation.

In conclusion, we may observe that to sit long in the dining-room after the ladies have retired is to pay a bad compliment to the hostess and her fair visitors; and that it is still worse to rejoin them with a flushed face and impaired powers of thought. A refined gentleman is always temperate.

Party and Ball-Room Etiquette.

HOW TO ORGANIZE A DANCING PARTY OR BALL.

AS the number of guests at a dinner-party is regulated by the size of the table, so should the number of invitations to a ball be limited by the proportions of the dancing or ball-room. A prudent hostess will always invite a few more guests than she really desires to entertain, in the certainty that there will be some deserters when the appointed evening comes round; but she will at the same time remember that to overcrowd her room is to spoil the pleasure of those who love dancing, and that a party of this kind when too numerously attended is as great a failure as one at which too few are present.

A room which is nearly square, yet a little longer than it is broad, will be found the most favourable for a ball. It admits of two quadrille par-

ties, or two round dances, at the same time. In a perfectly square room this arrangement is not so practicable or pleasant. A very long and narrow room, and their number in this country is legion, is obviously of the worst shape for the purpose of dancing, and is fit only for quadrilles and country dances.

The top of the ball-room is the part nearest the musicians. In a private room, the top is where it would be if the room were a dining-room. It is generally at the farthest point from the door. Dancers should be careful to ascertain the top of the room before taking their places, as the top couples always lead the dances.

A good floor is of the first importance in a ball-room. In a private house, nothing can be better than a smooth, well-stretched holland, with the carpet beneath.

Abundance of light and free ventilation are indispensable to the spirits and comfort of the dancers.

Good music is as necessary to the prosperity of a ball as good wine to the excellence of a dinner. No hostess should tax her friends for this part of the entertainment. It is the most injurious economy imaginable. Ladies who would prefer to dance are tied to the pianoforte; and as few amateurs have been trained in the art of playing dance music, with that strict attention to time and accent which is absolutely necessary to the comfort of the dancers, a total and general discontent is sure to be the result. To play dance music thoroughly well is a branch of the art which requires considerable practice. It is as different from every other kind of playing as whale fishing is from fly fishing. Those who give private balls will do well ever to bear this in mind, and to provide skilled musicians for the evening. For a small party, a piano and cornopean make a very pleasant combination. Unless where several instruments are engaged we do not recommend the introduction of the violin; although in some respects the finest of all solo instruments, it is apt to sound thin and shrill when employed on mere inexpressive dance tunes, and played by a mere dance player.

Invitations to a ball or dance should be issued in the name of the lady of the house, and written on small note-paper of the best quality. Elegant printed forms, some of them printed in gold or silver, are to be had at every stationer's by those who prefer them. The paper may be gilt-edged, but not coloured.

An invitation to a ball should be sent out at least ten days before the evening appointed, A fortnight, three weeks, and even a month may be allowed in the way of notice.

Not more than two or three days should be permitted to elapse before you reply to an invitation of this kind. The reply should always be addressed to the lady of the house, and should be couched in the same person as the invitation. The following are the forms generally in use :—

Mrs. Molyneux requests the honour of Captain Hamilton's company at an evening party, on Monday, March the 11th instant.

Dancing will begin at Nine o'clock.

Thursday, March 1st.

Captain Hamilton has much pleasure in accepting Mrs. Molyneux's polite invitation for Monday evening, March the 11th instant.

Friday, March 2nd.

The old form of "presenting compliments" is now out of fashion.

If Mrs. Molyneux writes to Captain Hamilton in the first person, as "My dear Sir," he is bound in etiquette to reply "My dear Madam."

The lady who gives a ball* should endeavour to secure an equal number of dancers of both sexes. Many private parties are spoiled by the preponderance of young ladies, some of whom never get partners at all, unless they dance with each other.

A room should in all cases be provided for the accommodation of the ladies. In this room there ought to be several looking-glasses; attendants to assist the fair visitors in the arrangement of their hair and dress; and some place in which the cloaks and shawls can be laid in order, and found at a moment's notice. It is well to affix tickets to the cloaks, giving a duplicate at the same time to each lady, as at the public theatres and concert rooms. Needles and thread should also be at hand, to repair any little accident incurred in dancing.

Another room should be devoted to refreshments, and kept amply supplied with coffee, lemonade, ices, wine, and biscuits during the evening. Where this cannot be arranged, the refreshments should be handed round between the dances.

The question of supper is one which so entirely depends on the means of those who give a ball or evening party, that very little can be said upon it in a treatise of this description. Where money is no object, it is of course always preferable to have the whole supper, "with all appliances and means to boot," sent in from some first-rate house. It spares all trouble whether to the entertainers or their servants, and relieves the hostess

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* It will be understood that we use the word "ball" to signify a private party where there is dancing, as well as a public ball.

of every anxiety. Where circumstances render such a course imprudent, we would only observe that a home-provided supper, however simple, should be good of its kind, and abundant in quantity. Dancers are generally hungry people, and feel themselves much aggrieved if the supply of sandwiches proves unequal to the demand.

BALL-ROOM TIOLETTE.

LADIES.

The style of a lady's dress is a matter so entirely dependent on age, means, and fashion, that we can offer but little advice upon it. Fashion is so variable, that statements which are true of it to-day may be false a month hence. Respecting no institution of modern society is it so difficult to pronounce half-a-dozen permanent rules.

We may perhaps be permitted to suggest the following leading principles; but we do so with diffidence. Rich colours harmonize with rich brunette complexions and dark hair. Delicate colours are the most suitable for delicate and fragile styles of beauty. Very young ladies are never so suitably attired as in white. Ladies who dance should wear dresses of light and diaphanous materials, such as *tulle* gauze, crape, net, etc., over coloured silk slips. Silk dresses are not suitable for dancing. A married lady who dances only a few quadrilles may wear a *decolletée* silk dress with propriety.

Very stout persons should never wear white. It has the effect of adding to the bulk of the figure.

Black and scarlet or black and violet, are worn in mourning.

A lady in deep mourning should not dance at all.

However fashionable it may be to wear very long dresses, those ladies who go to a ball with the intention of dancing and enjoying the dance, should cause their dresses to be made short enough to clear the ground. We would ask them whether it is not better to accept this slight deviation from an absurd fashion, than to appear for three parts of the evening in a torn and pinned-up skirt.

Well-made shoes, whatever their colour or material, and faultless gloves, are indispensable to the effect of a ball-room toilette.

Much jewellery is out of place in a ball-room. Beautiful flowers, whether natural or artificial, are the loveliest ornaments that a lady can wear on these occasions.

GENTLEMEN.

A black suit, thin enameled boots, a white neckcloth, and white or delicate gray gloves, are the chief points of a gentleman's ball-room toilette. He may wear a plain-bosomed shirt with one stud. White waistcoats are now fashionable. Much display of jewellery is no proof of good taste. A handsome watch-chain with, perhaps, the addition of a few costly trifles suspended to it, and a single shirt-stud, are the only adornments of this kind that gentleman should wear.

A gentleman's dress is necessarily so simple that it admits of no compromise in point of quality and style. The material should be the best that money can procure, and the fashion unexceptionable. So much on the outward man depends on his tailor, that we would urge no gentleman to economize in this matter.

ETIQUETTE OF THE BALL-ROOM.

On entering the ball-room, the visitor should at once seek the lady of the house, and pay his respects to her. Having done this, he may exchange salutations with such friends and acquaintances as may be in the room.

If the ball be a public one, and a gentleman desires to dance with any lady to whom he is a stranger, he must apply to a member of the floor committee for an introduction.

Even in private balls, no gentleman can invite a lady to dance without a previous introduction. This introduction should be effected through the lady of the house or a member of her family.

No lady should accept an invitation to dance from a gentleman to whom she has not been introduced. In case any gentleman should commit the error of so inviting her, she should not excuse herself on the plea of a previous engagement or of fatigue, as to do so would imply that she did not herself attach due importance to the necessary ceremony of introduction. Her best reply would be to the effect that she would have much pleasure in accepting his invitation if he would procure an introduction to her. This observation may be taken as applying only to public balls. At a private party the host and hostess are sufficient guarantees for the respectability of their guests; and although a gentleman would show a singular want of knowledge of the laws of society in acting as we have supposed, the lady who should reply to him as if he were merely an impertinent stranger in a public assembly-room, would be implying an affront to her entertainers. The mere fact of being assembled together under the roof of

a mutual friend, is in itself, a kind of general introduction of the guests to each other.

An introduction given for the mere purpose of enabling a lady and gentleman to go through a dance together, does not constitute an acquaintanceship. The lady is at liberty, should she feel like doing so, to pass the gentleman the next day without recognition.

To attempt to dance without a knowledge of dancing is not only to make one's self ridiculous, but one's partner also. No lady or gentleman has a right to place a partner in this absurd position.

Never forget a ball-room engagement. To do so is to commit an unpardonable offence against good breeding.

It is not necessary that a lady or gentleman should be acquainted with the *steps* in order to walk gracefully and easily through a quadrille. An easy carriage and a knowledge of the figure is all that is requisite. A round dance, however, should on no account be attempted without a thorough knowledge of the steps and some previous practice.

No person who has not a good ear for time and tune need hope to dance well.

At the conclusion of a dance the gentleman bows to his partner, and either promenades with her round the room or takes her to a seat. Where a room is set apart for refreshments, he offers to conduct her thither. At a public ball no gentleman would, of course, permit a lady to pay for refreshments. Good taste forbids that a lady and gentleman should dance too frequently together, at either a public or private ball. Engaged persons should be careful not to commit this conspicuous solecism.

If a lady happens to forget a previous engagement, and stands up with another partner, the gentleman whom she has thus slighted is bound to believe that she has acted from mere inadvertence, and should by no means suffer his pride to master his good temper. To cause a disagreeable scene in a private ball-room is to affront your host and hostess, and to make yourself absurd. In a public room it is no less reprehensive.

Always remember that good breeding and good temper (or the appearance of good temper) are inseparably connected.

Young gentlemen are earnestly advised not to limit their conversation to remarks on the weather and the heat of the room. It is to a certain extent incumbent on them to do something more than dance when they invite a lady to join a quadrille. If it be only upon the news of the day, a gentleman should be able to afford at least three or four observations to his partner in the course of a long half hour.

Gentlemen who dance cannot be too careful not to injure the dresses of the ladies who do them the honour to stand up with them. The young men of the present day are singularly careless in this respect, and when they have torn a lady's delicate skirt, appear to think the mischief they have done scarcely worth the trouble of an apology.

A gentleman conducts his last partner to the supper-room, and having waited upon her while there, re-conducts her to the ball-room.

Never attempt to take a place in a dance which has been previously engaged.

A thoughtful hostess will never introduce a bad dancer to a good one, because she has no right to punish one friend in order to oblige another.

It is not customary for married persons to dance together in society.

THE QUADRILLE.

The Quadrille is the most universal, as it is certainly the most sociable of all fashionable dances. It admits of pleasant conversation, frequent interchange of partners, and is adapted to every age, the young or old; the ponderous *paterfamilias* or his sylph-like daughter, may with equal propriety take part in its easy and elegant figures. Even an occasional blunder is of less consequence in this dance than in many others, for each personage is in some degree free as to his own movements, not being compelled by the continual embrace of his partner to dance either better or worse than he may find convenient.

People now generally walk through a quadrille. Nothing more than a perfect knowledge of the figure, a graceful demeanour, and a correct ear for the time of the music are requisite to enable any one to take a creditable part in this dance.

As soon as a gentleman has engaged his partner for the quadrille, he should endeavour to secure as his *vis-à-vis* some friend or acquaintance, and should then lead his partner to the top of the quadrille, provided that post of honour be still vacant. He will place the lady always at his right hand.

Quadrille music is divided into eight bars, for each part of the figure; two steps should be taken in every bar; every movement thus invariably consists of eight or four steps.

It is well not to learn too many new figures; the memory is liable to become confused among them; besides which, it is doubtful whether your partner, or your *vis-à-vis*, is as learned in the matter as yourself. Masters are extremely fond of inventing and teaching new figures; but you will

do well to confine your attention to a few simple and universally received sets, which you will find quite sufficient for your purpose. We begin with the oldest and most common, the

FIRST SET OF QUADRILLES.

FIRST FIGURE.—LE PANTALON.

The couples at the top and bottom of the quadrille cross to each other's places in eight steps, occupying four bars of the time; re-cross immediately to their own places, which completes the movement of eight bars. This is called the *Chaine Anglaise.* The gentleman always keeps to the right of *vis-à-vis's* lady in crossing, thus placing her *inside.*

Set to partners, or *balancez;* turn your partner. (This occupies the second eight bars.) Ladies' chain, or *chaine des dames.* (Eight bars more.) Each couple crosses to opposite couple's place, gentleman giving his hand to his partner; this is called half-promenade. Couples re-cross right and left to their places, without giving hands, which completes another eight bars and ends the figure.

The side couples repeat what the top and bottom couples have done.

SECOND FIGURE.—LE'TE.

The ladies in all the top couples, and their *vis-à-vis* gentlemen, advance four steps, and retire the same, repeating this movement once again, which makes the first eight bars.

Top ladies and *vis-a-vis* gentlemen cross to each other's places; advance four steps; retreat ditto; cross back towards partners, who set to them as they advance; turn partners, which ends the first half of figure.

Second ladies and top *vis-a-vis* gentlemen execute the same movements. The side couples begin, the privilege of commencement being conferred on those ladies who stand at the *right* of the top couples.

This figure is sometimes performed in a different manner known as double *L'Eté.* Instead of the top lady and *vis-a-vis* gentlemen advancing alone, they advance with partners, joining hands; cross and return, as in the single figure. This variation is, however, somewhat out of vogue, except (as will presently be seen) in the last figure of the quadrille, where it is still frequently introduced.

THIRD FIGURE.—LA POULE.

Top lady and *vis-a-vis* gentleman cross to each other's places, giving right hand in passing; cross back again with left hand (eight bars). The

THE TETE A TETE.

two couples form in a line, and join hands, the left hand of the one holding the right hand of his or her neighbour, so that each faces different ways; in this position all four *balancez*, then half promenade with partner to opposite place: top lady and *vis-a-vis* gentleman advance four steps and retire ditto. (2nd eight bars.) Both top and bottom couples advance together, and retire the same; then re-cross right and left to places. (3rd eight bars.) Second lady and first opposing gentleman repeat figure. Side couples repeat, observing same rule for commencement as in *L'Eté*.

FOURTH FIGURE.—LA TRENISE.

Top couples join hands, advance four steps and retreat ditto; advance again, gentleman leaving lady at left hand of *vis-a-vis* gentleman and retiring alone. (1st eight bars.) Two ladies advance, crossing to opposite side; gentleman advances to meet his partner, *vis-a-vis* lady returns to hers. (2nd eight bars). *Balancez;* turns partners to places. (3rd eight bars.) Second couple performs same figure; side couples repeat as before

If *La Pastorale* be preferred, it will be performed thus:—Top couples advance and retreat; advance, gentleman leading lady to left hand of *vis-a-vis* gentleman; he advances with both ladies four steps, retreating ditto; again advancing he leaves both ladies with first gentleman, retreating alone; top gentleman and both ladies advance and retreat; again advance, joining hands in circle, go half round, half promenade to opposite places, then return right and left to their own. Second couples and side couples repeat as before.

FIFTH FIGURE.—LA FINALE.

Begin with the *grand rond* or great round; that is, the whole quadrille; first and second couples and sides join hands all around, advance four steps, and retreat ditto. *L'Eté* is now sometimes introduced, the *grand rond* being repeated between each division of the figure. But it gives a greater variety and *brio* to the quadrille if, after the first *grand rond*, the following figure is performed, the *galop* step being used throughout. Each gentleman (at top and bottom couples) takes his lady round the waist, as for the *galop*; advance four steps, retreat ditto, advance again, cross to opposite places; advance, retreat, re-cross to own places. Ladies' chain; half promenade across; half right and left to places; *grand rond*. Side couples repeat figure. *Grand rond* between each division and at the conclusion. Bow to your partners, and conduct your lady to seat.

THE LANCERS.

The Lancers Quadrille is perhaps the most graceful and animated of any. Within the last few years it has become a great favourite in fashionable circles. It admits of much skill and elegance in executing its quick and varied figures, a correct acquaintance with which is absolutely requisite to all who take part in it. Unlike the common quadrille, the Lancers must be danced by four couples only in each set; though of course there can be many sets dancing at the same time. The number being so limited, one awkward or ignorant person confuses the whole set; therefore, it is indispensable that every one who dances in this quadrille should have a thorough mastery of its graceful intricacies. We have observed that of late it has become the fashion to substitute new tunes and new figures for the old well-known music of the Lancers Quadrille. We cannot consider this an improvement. The old simple melodies are peculiarly fitted to the sprightly, joyous character of the dance; which is more than can be said for any of the modern substitutes. When these are used, the Lancers, in our opinion, loses its individuality and spirit, becoming almost like a common quadrille. We should be heartily glad to see the old tunes restored, once for all, to their rightful supremacy.

The sets of four couples, top, opposite, and sides, having been arranged, the dance begins as follows :—

1st Figure.—First lady and opposite gentleman advance and retreat; advance again, joining their hands; pass round each other and back to places. (1st eight bars.) Top couple join hands, and cross, opposite couple crossing at the same time, separately, outside them; the same reversed, back to places. (2nd eight bars.) All the couples *balancez* to corners; each gentleman turns his neighbour's partner back to places. (3rd eight bars.) Second couple repeat figure from beginning; after them side couples, those who stand to the right of top couple having always the priority, as in the common quadrille.

2nd Figure.—First couple advance and retreat, gentleman holding lady's left hand; advance again; gentleman leaves his partner in the centre of the quadrille, and retires to place. (1st eight bars.) *Balancez* to each other and turn to places. (2nd eight bars). Side couples join first and second couples, forming a line of four on either side. Each line advances four steps, retreats ditto; then advances again, each gentleman reclaiming his partner, and all turn to places. Second and side couples repeat figure in succession.

3rd Figure.—First lady advances four steps alone, and stops; *vis-a-vis* gentleman does the same; first lady retires, facing gentleman, to whom she makes a slow profound courtesy. (The courtesy must occupy a bar or two of the music; and as, if made with grace and dignity, it is most effective, we would recommend ladies to practise it carefully beforehand.) The gentleman at the same time bows and retires (1st eight bars). All four ladies advance to centre, give right hands across to each other (which is called the *double chain*), and left hand to *vis-a-vis* gentleman; then back again, left hand across in the middle, and right hands to partners back to places. (2nd eight bars.) Second and side couples repeat figure from commencement.

A more recent fashion for dancing this figure is as follows: Instead of one lady advancing at first, all four advance, and courtesy to each other; then turn and courtesy to their partners. Ladies do the *moulinet* in the centre; that is, give right hands across to each other, and half round; left hands across back again and return to places. Gentlemen meantime all move round outside the ladies, till each has regained his place. Figure as usual repeated four times; but the second and fourth time the gentlemen advance instead of the ladies, and bow, first to each other, then to their partners; continuing as before through the rest of the figure.

4th Figure.—Top gentleman, taking partner's left hand, leads her to the couple on their right, to whom they bow and courtesy (which civility must be met with the like acknowledgment), then cross quickly to fourth couple, and do the same. (1st eight bars.) All four couples *chassez croisez* right and left (gentlemen invariably passing behind his partner), then turn hands (*four des mains*) back to places. (2nd eight bars.) First and opposite couples right and left across and back again to place (3rd eight bars.) Second and sides repeat as usual.

5th Figure.—This figure commences with the music. Each couple should stand ready, the gentleman facing his partner, his right hand holding hers. If every one does not start directly the music begins, and does not observe strict time throughout, the somewhat intricate figure becomes hopelessly embarrassed; but, when well danced, it is the prettiest of the set. It commences with the *grande chaine* all round; each gentleman giving his right hand to his partner at starting, his left to the next lady, then his right again, and so all round, till all have returned to their places. (This occupies sixteen bars of the music.) First couple promenade inside figure, returning to places with their backs turned to opposite couple. The side couple on their right falls in immediately behind them; the fourth couple follows, the second couple remaining in their places. A double line

is thus formed—ladies on one side and gentlemen on the other. (3rd eight bars.) All *chassez croisez*, ladies left, gentlemen right, behind partners. First lady leads off, turning sharply round to the right; first gentleman does the same to the left, meeting at the bottom of the quadrille, and promenade back to places. All the ladies follow first lady; all the gentlemen follow first gentleman; and as each meets his partner at the bottom of the figure, they touch hands, then fall back in two lines—ladies on one side, gentlemen on the other—facing each other. (4th eight bars.) Four ladies join hands, advance, and retreat; four gentlemen ditto at the same time; then each turns his partner to places. (5th eight bars.) *Grande chaine* again. Second and side couples repeat the whole figure in succession, each couple taking its turn to lead off, as the first had done. *Grande chaine* between each figure and in conclusion.

THE LANCERS FOR SIXTEEN, OR DOUBLE LANCERS.

1*st Figure.*—Two first ladies and *vis-a-vis* gentlemen begin at the same moment, and go through the figure as in Single Lancers. All *balancez* to corners; in other words, each lady sets to gentleman at her right, who turns her to her place. Second couples and sides repeat as usual.

2*nd Figure.*—First couples advance, retreat, advance again, leaving ladies in centre; set to partners and turn to places. Two side couples nearest first couples join them; two side couples nearest second couples do the same, thus forming eight in each line. They all advance and retreat, holding hands, then turn partners to places. Repeated by second and side couples as usual.

3*rd Figure.*—First ladies advance and stop; *vis-a-vis* gentlemen ditto; courtesy profoundly, bow, and back to places. Ladies do the *moulinet*, gentlemen go round outside, and back to places. Or, ladies advance and courtesy to each other and then to partners; gentlemen doing the same when the second and fourth couples begin the figure, as in Single Lancers.

4*th Figure.*—First couples advance to couples on their right; bow and courtesy; cross to opposite side, bow and courtesy, *chassez croisez*, and return to place. Right and left to opposite place, and back again. Second couples and sides repeat figure.

5*th Figure.*—*Grande chaine* all round, pausing at the end of every eight bars to bow and courtesy; continue *chaine* back to places, which will occupy altogether thirty-two bars of the music. Figure almost the same as in Single Lancers. Both first couples lead around, side couples falling in behind, thus forming four sets of lines. Figure repeated by second

and side couples; *grande chaine* between each figure and at the conclusion.

DOUBLE QUADRILLE.

This quadrille contains the same figures as the common quadrille, but so arranged that they are danced by four instead of two couples. All quadrille music suits it; and it occupies just half the time of the old quadrille. It makes an agreeable variety in the movements of the dance, and is easily learned. It requires four couples.

FIRST FIGURE.—PANTALON.

First and second couples right and left, whilst side couples dance the *chaine Anglaise* outside them. All four couples set to partners and turn them. Four ladies form ladies' chain, or hands across in the middle of the figure, giving first right hands, and then left, back to places. Half promenade, first and second couples do *chaine Anglaise,* while side couples do *grande chaine* round them. This leaves all in their right places, and ends figure.

SECOND FIGURE.—L'ETÉ.

First lady, and lady on her right hand, perform the figure with their *vis-à-vis* gentlemen, as in common *L'Eté;* taking care, when they cross, to make a semi-circle to the left. Second couple and second side couple repeat figure, as in common *L'Eté.*

THIRD FIGURE.—LA POULE.

Top lady and *vis-à-vis* gentleman, lady at her right and her opposite gentleman, perform figure at the same time, setting to each other in two cross lines. Other couples follow as usual.

FOURTH FIGURE.—LA PASTORALE.

The first and opposite couples dance the figure, not with each other, but with the couples to their right. The latter do the same with first and second couples.

FIFTH FIGURE.—FINALE.

Galopade all round. Top and opposite galopade forwards, and retreat. As they retreat side couples advance; and as they retreat in their turn, first and second couples galopade to each others places. Side couples the same. First and second couples advance again; side couples the same as the others retreat; first and second back to places as side couples retreat.

Side couples back to places. Double *chaine des dames*, and galopade all round. Then side couples repeat figure as usual, and *galop* all round in conclusion.

It is requisite to keep correct time and step in this quadrille, which would otherwise become much confused.

THE POLKA.

The origin of this once celebrated dance is difficult to ascertain. It is believed by some to be of great antiquity, and to have been brought into Germany from the East. Others affirm that its origin is of more recent date, and its birthplace considerably nearer home. An authority on these matters remarks: "In spite of what those professors say who proclaim to have learned the Polka in Germany, or as being indebted for it to an Hungarian nobleman, we are far from placing confidence in their assertions. In our opinion, Paris is its birthplace, and its true author, undoubtedly, the now far-famed Monsieur Cellarius, for whom this offspring of his genius has gained a European celebrity."

Whatever we may be inclined to believe with regard to this disputed question, there can be no doubt of the widespread popularity which for many years was enjoyed by the Polka. When first introduced in 1843, it was received with enthusiasm; and it effected a complete revolution in the style of dancing which had prevailed up to that period. A brisk, lively character was imparted even to the steady-going quadrille; the old *Valse à Trois Temps* was pronounced insufferably "slow"; and its brilliant rival, the *Valse à Deux Temps*, which had been recently introduced, at once established the supremacy which it has ever since maintained. The *galop*, which had been until this period only an occasional dance, now assumed a prominent post in every ball-room, dividing the honours with the valse.

Perhaps no dance affords greater facilities for the display of ignorance or skill, elegance or vulgarity, than the Polka. The step is simple and easily acquired, but the method of dancing it varies *ad infinitum*. Some persons race and romp through the dance in a manner fatiguing to themselves and dangerous to their fellow-dancers. Others (though this is more rare) drag their partner listlessly along, with a sovereign contempt alike for the requirements of the time and the spirit of the music. Some gentlemen hold their partner so tight that she is half-suffocated; others hold her so loosely that she continually slips away from them. All these extremes are equally objectionable, and defeat the graceful intention of the dance. It should be performed quietly, but with spirit, and *always*

in strict time. The head and shoulders should be kept still, not jerked and turned at every step, as is the manner of some. The feet should glide swiftly along the floor—not hopping or jumping as if the boards were red hot.

You should clasp your partner lightly but firmly round the waist with your right arm.

Your left hand takes her right hand; but beware of elevating your arm and hers in the air, or holding them out straight, which suggests the idea of windmills.

Above all, never place your hand on your hip or behind you. In the first place, you thus drag your partner too much forward, which makes her look ungraceful; in the next, this attitude is *never used* except in casinos, and it is almost an insult to introduce it in a respectable ball-room.

Let the hand which clasps your partner's fall easily by your side in a natural position, and keep it there. Your partner's left hand rests on your right shoulder; her right arm is thrown a little forwards towards your left.

The Polka is danced in $\frac{2}{4}$ time. There are three steps in each bar; the fourth beat is always a rest.

It is next to impossible to describe in words the step of the Polka, or of any circular dance: nothing but example can correctly teach it; and although we shall do our best to be as clear as possible, we would earnestly recommend those of our readers who desire to excel whether in this or the following dances, to take a few lessons from some competent instructor.

The gentleman starts with his left foot, the lady with her right. We shall describe the step as danced by the gentleman; the same directions, reversing the order of the feet, will apply to the lady.

1*st beat.*—Spring lightly on right foot, at the same time slide left foot forward.

2*d beat.*—Bring right foot forward by *glissade*, at the same time raising left foot.

3*d beat.*—Bring left foot slightly forward and *fall* upon it, leaving right foot raised, and the knee slightly bent, ready to begin the step at the first beat of the next bar.

4*th beat.*—Remain on left foot. Begin next bar with the right foot, and repeat the step to the end of third beat. Begin the following bar with left foot, and so on; commencing each bar with right or left foot alternately.

The Polka is danced with a circular movement, like the Valse; in each bar you half turn, so that by the end of the second bar, you have brought your partner completely round.

The circular movement of the Polka admits of two directions—from right to left or from left to right. The ordinary direction is from right to left. The opposite one is known as the *reverse* step. It is more difficult to execute, but is a pleasant change for skilled dancers, if they have become giddy from turning too long in one direction.

In dancing the Polka, or any circular dance where a large number of couples are performing at the same time, the gentleman must be careful to steer his fair burden safely through the mazes of the crowded ball-room. A little watchfulness can almost always avoid collisions, and a good dancer would consider himself disgraced if any mishap occurred to a lady under his care. Keep a sharp lookout, and avoid crowded corners. Should so many couples be dancing as to render such caution impossible, stop at once and do not go on until the room has become somewhat cleared. In a few minutes others will have paused to rest, and you can then continue. Your partner will be grateful that your consideration has preserved her from the dismal plight in which we have seen some ladies emerge from this dance—their *coiffures* disordered, their dresses torn, and their cheeks crimson with fatigue and mortification, while their indignant glances plainly showed the anger they did not care to express in words, and which their reckless partner had fully deserved. A torn dress is sometimes not the heaviest penalty incurred: we have known more than one instance where ladies have been lamed for weeks through the culpable carelessness of their partners; their tender feet having been half crushed beneath some heavy boot in one of these awkward collisions. This is a severe price to pay for an evening's amusement, and gentlemen are bound to be cautious how they inflict it or anything approaching to it, upon their fair companions. Ladies, on the other hand, will do well to remember that by leaning heavily upon their partner's shoulder, dragging back from his encircling arm, or otherwise impeding the freedom of his movements, they materially add to his labour and take from his pleasure in the dance. They should endeavour to lean as lightly, and give as little trouble as possible; for, however flattering to the vanity of the nobler sex may be the idea of feminine dependence, we question whether the reality, in the shape of a dead weight upon their aching arms throughout a Polka or a Valse of twenty minutes' duration, would be acceptable even to the most chivalrous among them.

We have been thus minute in our instructions, because they not only apply to the Polka, but equally to all circular dances where a great number stand up to dance at the same time. We now pass on to the Mazurka.

The time of the Mazurka is ¾, like the common valse; but it should be played much more slowly; if danced quickly, it becomes an unmeaning succession of hops, and its graceful character is destroyed.

We describe the step as danced by the lady; for gentlemen it will be the same, with the feet reversed; that is, for right foot read left, and so on.

FIRST STEP.

1*st and* 2*nd beats.*—Spring on left foot, sliding forward right foot at the same time, and immediately let your weight rest on the forward foot. This occupies two beats.

3*rd beat.*—Spring on right foot; this ends the bar.

2*nd bar*, 1*st and* 2*nd beats.*—Spring again on right foot, and slide forward left at same time. Rest on it a moment as before during second beat; at third beat spring on it; which ends second bar. Continue same step throughout. You will perceive that, at the first and third beats of the time you hop slightly, resting, during the second beats, on the foremost foot.

SECOND STEP.

1*st beat.*—Spring on left foot, slightly striking both heels together.

2*nd beat.*—Slide right foot to the right, bending the knee.

3*rd beat.*—Bring the left foot up to the right foot with a slight spring, raising right foot; which ends the first bar.

2*nd bar*, 1*st beat.*—Spring again on left foot, striking it with heel of right.

2*nd beat.*—Slide right foot to the right.

3*rd beat.*—Fall on right foot, raising left foot behind it, which ends the second bar. Reverse the step by springing first on the right foot, and sliding the left, etc. The music generally indicates that this step should be repeated three times to the right, which occupies three bars then *rest* during the fourth bar, and return with reverse step to the left during the three bars which follow, resting again at the eighth bar.

THIRD STEP.

1*st beat.*—Spring on left foot, and slide right foot to the right.

2*nd beat.*—Rest on right foot.

3*rd beat.*—Spring on right foot, bringing left foot up behind it.

2nd bar, 1st beat.—Spring on right foot, sliding left foot to the left.

2nd beat.—Rest on left foot.

3rd beat.—Hop on left foot, bringing right behind as before. Continue at pleasure.

The first of these three steps is most commonly used in the valse; but the second is an agreeable change for those who may have grown giddy or weary in doing the *figure en tournant* (circular movement).

Be careful not to exaggerate the slight hop at the first and third beats of each bar; and to *slide* the foot gracefully forward, not merely to make a step, as some bad dancers do.

THE MAZURKA QUADRILLE.

This elegant quadrille has five figures, and can be performed by any even number of couples. The music, like the step, is that of the Mazurka. The couples are arranged as in the ordinary quadrille.

Join hands all round; *grand rond* to the left (four bars), then back again to the right (four bars), employing the *second* step of the Mazurka. Each couple does the *petit tour* forwards and backwards, still using the second step, and repeating it three times to the right—then resting a bar; three times to the left, then resting another bar; which occupies eight bars of the music. These figures may be considered as preliminary.

1st Figure.—Top and bottom couples right and left (eight bars), with Redowa step; then they advance, the ladies cross over, the gentlemen meanwhile pass quickly round each other, and return to own places (four bars); *petit tour* forward with opposite ladies (four bars); right and left (eight bars); advance again; the ladies return to own places, and the gentlemen pass again round each other to their own ladies (four bars); *petit tour* backward (four bars). Side couples do likewise.

2nd Figure.—(Eight bars rest.) Top and bottom couples advance and retire, hands joined (four bars). All cross over into opposite places, each going to each other's left (four bars); *petit tour* forward (four bars); advance and retire (four bars), and return to places (four bars). *Petit tour* (four bars). Side couples do likewise.

3rd Figure.—(Eight bars rest). Top and bottom ladies cross over into opposite places (four bars); return, presenting left hand to each other, and right hand to partner, as in *La Poule* (four bars); pass round with partners into opposite places (four bars); *petit tour* backward (four bars); *vis-à-vis* couples hands across, round (six bars); retire (two bars); top and bottom ladies cross over (four bars); ladies cross again, giving each

other left hands, and right to partners (four bars). All pass round to own places (four bars); *petit tour* backward (four bars).

4th Figure.—(Eight bars rest.) Top couple lead round inside the figure (eight bars); *petit tour* forward and backward (eight bars); advance to opposite couple; the gentleman turns half round without quitting his partner, and gives his left hand to opposite lady; the two ladies join hands behind gentleman (four bars); in this position the three advance and retire (eight bars). The gentleman passes under the ladies' arms; all three pass round to the left, with second step of Mazurka, the opposite lady finishing in her own place (four bars). The top couple return to places (four bars); *petit tour* forward (four bars). Opposite couple and side couples do likewise.

5th Figure.—(Eight bars rest.) Top and bottom couples half right and left (four bars); *petit tour* backward (four bars); half right and left to places (four bars); *petit tour* backward (four bars); *vis-à-vis* couples hands round to opposite places (four bars); *petit tour* forward (four bars); hands round to own places (four bars); *petit tour* (four bars); right and left (eight bars).

Side couples do likewise.

Finale.—Grand round all to the left, and then to the right (sixteen bars); grand chain, as in the Lancers, with first step of Mazurka (sixteen bars). But if there are more than eight in the quadrille, the music must be continued until all have regained their places.

N.B.—Music continues during rests.

THE VALSE A DEUX TEMPS.

We are indebted to the mirth-loving capital of Austria for this brilliant Valse.

This Valse is incorrect in time. Two steps can never properly be made to occupy the space of three beats in the music. The ear requires that each beat shall have its step. This inaccuracy in the measure has exposed the *Valse a Deux Temps* to the just censure of musicians, but has never interfered with its success among dancers. We must caution our readers, however, against one mistake often made by the inexperienced. They imagine that it is unnecessary to observe any rule of time in this dance, and are perfectly careless whether they begin the step at the beginning, end, or middle of the bar. This is quite inadmissible. Every bar must contain within its three beats two steps. These steps must begin and end strictly with the beginning and end of each bar; otherwise a hopeless

confusion of the measure will ensue. Precision in this matter is the more requisite, because of the peculiarity in the measure. If the first step in each bar be not strongly marked, the valse measure has no chance of making itself apparent; and the dance becomes a meaningless *galop*.

The step contains two movements, a *glissade* and a *chassez*, following each other quickly in the same direction. Gentleman begins as usual with his left foot; lady with her right.

1*st beat.*—*Glissade* to the left with left foot.

2*nd and* 3*rd beats.*—*Chassez* in the same direction with right foot; do not turn in this first bar.

2*nd bar*, 1*st beat.*—Slide right foot backwards, turning half round.

2*nd and* 3*rd beats.*—Pass left foot behind right, and *Chassez* forward with it, turning half round to complete the *figure en tournant*. Finish with right foot in front, and begin over again with left foot.

There is no variation in this step; but you can vary the movement by going backward or forward at pleasure, instead of continuing the rotary motion. The *Valse a Deux Temps*, like the Polka, admits of a reverse step; but it looks awkward unless executed to perfection. The first requisite in this Valse is to avoid all jumping movements. The feet must glide smoothly and swiftly over the floor, and be raised from it as little as possible. Being so very quick a dance, it must be performed quietly, otherwise it is liable to become ungraceful and vulgar. The steps should be short, and the knees slightly bent.

As the movement is necessarily very rapid, the danger of collision is proportionately increased; and gentlemen will do well to remember and act upon this hint.

They should also be scrupulous not to attempt to conduct a lady through this valse until they have thoroughly mastered the step and well practised the *figure en tournant*. Awkwardness or inexperience doubles the risk of a collision; which, in this extremely rapid dance, might be attended with serious consequences.

The *Deux Temps* is a somewhat fatiguing valse, and after two or three turns around the room, the gentleman should pause to allow his partner to rest. He should be careful to select a lady whose height does not present too striking a contrast to his own; for it looks ridiculous to see a tall man dancing with a short woman and *vice versa*. This observation applies to all round dances, but especially to the valse, in any of its forms.

THE GALOP.

The Galop, as its name implies, is the quintescence of all the "fast" dances. At the time of the Polka mania it was very much in vogue, and almost as great a favourite as the *Deux Temps*. Although its popularity has greatly declined of late, it generally occurs twice or thrice in the programme of every ball-room; and the music of the Galop is, like the dance itself, so gay and spirited, that we should regret to see it wholly laid aside. The step is similar to that of the *Deux Temps* Valse, but the time is $\frac{2}{4}$, and as quick as possible. Two *chassez* steps are made in each bar. The figure can be varied by taking four or eight steps in the same direction, or by turning with every two steps, as in the *Deux Temps*. Like all round dances, it admits of an unlimited number of couples. Being, perhaps, the most easy of any, every one takes part in it, and the room is generally crowded during its continuance. A special amount of care is therefore necessary on the part of the gentleman to protect his partner from accidents.

SIR ROGER DE COVERLEY AND A VIRGINNY REEL.

Sir Roger de Coverley or the Virginny Reel is always introduced at the end of the evening, and no dance could be so well fitted to send the guests home in good humour with each other and with their hosts. We describe it as it is danced in the present day, slightly modernized to suit the taste of our present time. Like the quadrille, it can be danced with equal propriety by old or young, and is so easy that the most inexperienced dancer may fearlessly venture to take part in it.

Form in two parallel lines; ladies on the left, gentlemen on the right, facing their partners. All advance; retreat (which occupies the first four bars); cross to opposite places (four bars more); advance and retreat (four bars); recross to places (four bars).

The lady who stands at the top and the gentleman who stands at the bottom, of each line, advance towards each other, courtesy and bow, and retire to places. The gentleman at the top and the lady at the bottom do the same. Top lady advances, gives right hand to partner opposite, and passes behind the two gentlemen standing next to him. Then through the line and across it, giving left hand to partner, who meets her half way between the two lines, having in the meantime passed behind the two ladies who stood next his partner. Lady then passes behind the two ladies next lowest; gentleman at same time behind the two gentlemen next lowest; and so on all down the line. At the bottom lady gives

left hand to her partner, and they promenade back to place at the top of the line. (This figure is frequently omitted.) Top couple advance, courtesy and bow, then lady turns off to the right, gentlemen to the left, each followed by the rest of her or his line. Top couple meet at the bottom of figure, join hands, and raising their arms, let all the other couples pass under them towards the top of the line, till all reach their own places, except the top, who have now become the bottom couple. Figure is repeated from the beginning, until the top couple having once more worked their way back to their original places at the top of the line.

Etiquette of Courtship and Marriage.

FIRST STEPS IN COURTSHIP.

IT would be out of place in these pages to grapple with a subject so large as that of Love in its various phases: a theme that must be left to poets, novelists, and moralists to dilate upon. It is sufficient for our purpose to recognise the existence of this, the most universal—the most powerful—of human passions, when venturing to offer our counsel and guidance to those of both sexes who, under its promptings, have resolved to become votaries of Hymen, but who, from imperfect knowledge of conventional usages, are naturally apprehensive that at every step they take they may render themselves liable to misconception, ridicule, or censure.

We will take it for granted, then, that a gentleman has in one way or another become fascinated by a fair lady—possibly a recent acquaintance—whom he is most anxious to know more particularly. His heart already feels "the inly touch of love," and his most ardent wish is to have that love returned.

At this point we venture to give him a word of serious advice. We urge him, before he ventures to take any step towards the pursuit of this object, to consider well his position and prospects in life, and reflect whether they are such as to justify him in deliberately seeking to win

the young lady's affections, with the view of making her his wife at no distant period. Should he, after such a review of his affairs, feel satisfied that he can proceed hononrably, he may then use fair opportunities to ascertain the estimation in which the young lady, as well as her family, is held by friends. It is perhaps needless to add, that all possible delicacy and caution must be observed in making such enquiries, so as to avoid compromising the lady herself in the slightest degree. When he has satisfied himself on this head, and found no insurmountable impediment in his way, his next endeavour will be, through the mediation of a common friend, to procure an introduction to the lady's family. Those who undertake such an office incur no slight responsibility, and are, of course, expected to be scrupulously careful in performing it, and to communicate all they happen to know affecting the character and circumstances of the individual they introduce.

We will now reverse the picture, and see how matters stand on the fair one's side.

First, let us hope that the inclination is mutual; at all events that the lady views her admirer with preference, that she deems him not unworthy of her favourable regard, and that his attentions are agreeable to her. It is true her heart may not yet be won: she has to be wooed; and what fair daughter of Eve has not hailed with rapture that brightest day in the springtide of her life? She has probably first met the gentleman at a ball, or other festive occasion, where the excitement of the scene has reflected on every object around a roseate tint. We are to suppose, of course, that in looks, manners, and address, her incipient admirer is not below her ideal standard in gentlemanly attributes. His respectful approaches to her—in soliciting her hand as a partner in the dance, etc.—have first awakened on her part a slight feeling of interest towards him. This mutual feeling of interest, once established, soon "grows by what it feeds on." The exaltation of the whole scene favours its development, and it can hardly be wondered at if both parties leave judgment "out in the cold" while enjoying each other's society, and possibly already pleasantly occupied in building "castles in the air." Whatever may eventually come of it, the fair one is conscious for the nonce of being unusually happy. This emotion is not likely to be diminished when she finds herself the object of general attention—accompanied, it may be, by the display of a little envy among rival beauties—owing to the assiduous homage of her admirer. At length, prudence whispers that he is to her, as yet, a comparative stranger; and with a modest reserve she endeavours to retire from his observation, so as not to seem to encourage his attentions. The

gentleman's ardour, however, is not to be thus checked; he again solicits her to be his partner in a dance. She finds it hard, very hard, to refuse him; and both, yielding at last to the alluring influences by which they are surrounded, discover at the moment of parting that a new and delightful sensation has been awakened in their hearts.

At a juncture so critical in the life of a young, inexperienced woman as that when she begins to form an attachment for one of the opposite sex—at a moment when she needs the very best advice, accompanied with a considerable regard for her overwrought feelings—the very best course she can take is to confide the secret of her heart to that truest and most loving of friends—her mother. Fortunate is the daughter who has not been deprived of that wisest and tenderest of counsellors—whose experience of life, whose prudence and sagacity, whose anxious care and appreciation of her child's sentiments, and whose awakened recollections of her own trysting days, qualify and entitle her, above all other beings, to counsel and comfort her trusting child, and to claim her confidence. Let the timid girl then pour forth into her mother's ear the flood of her pent-up feelings. Let her endeavour to distrust her own judgment, and seek hope, guidance, and support from one who, she well knows, will not deceive or mislead her. The confidence thus established will be productive of the most beneficial results—by securing the daughter's obedience to her parent's advice, and her willing adoption of the observances prescribed by etiquette, which, as the courtship progresses, that parent will not fail to recommend as strictly essential in this phase of life. Where a young woman has had the misfortune to be deprived of her mother, she should at such a period endeavour to find her next best counsellor in some female relative, or other trustworthy friend.

We are to suppose that favourable opportunities for meeting have occurred, until, by and by, both the lady and her admirer have come to regard each other with such warm feelings of inclination as to have a constant craving for each other's society. Other eyes have in the meantime not failed to notice the symptoms of a growing attachment; and some "kind friends" have, no doubt, even set them down as already engaged.

The admirer of the fair one is, indeed, so much enamoured as to be unable longer to retain his secret within his own breast; and not being without hope that his attachment is reciprocated, resolves on seeking an introduction to the lady's family preparatory to his making a formal declaration of love.

It is possible, however, that the lover's endeavours to procure the desired introduction may fail of success, although where no material difference of social position exists, this difficulty will be found to occur less frequently than might at first be supposed. He must then discreetly adopt measures to bring himself, in some degree, under the fair one's notice : such, for instance, as attending the place of worship which she frequents, meeting her, so often as to be manifestly for the purpose, in the course of her promenades, etc. He will thus soon be able to judge—even without speaking to the lady—whether his further attentions will be distasteful to her. The signs of this on the lady's part, though of the most trifling nature, and in no way compromising her, will be unmistakable ; for, as the poet tells us in speaking of the sex :—

> " He gave them but one tongue to say us ' Nay,'
> And two fond eyes to grant ! "

Should her demeanour be decidedly discouraging, any perseverance on his part would be ungentlemanly and highly indecorous. But, on the other hand, should a timid blush intimate doubt, or a gentle smile lurking in the half-dropped eye give pleasing challenge to further parley, when possible he may venture to write—not to the lady—that would be the opening of a clandestine correspondence ; an unworthy course, where every act should be open and straightforward, as tending to manly and honourable ends—but to the father or guardian, through the agency of a common friend where feasible, or, in some instances, to the party at whose residence the lady may be staying. In his letter he ought first to state his position in life and prospects, as well as mention his family connections ; and then request permission to visit the family, as a preliminay step to paying his addresses to the object of his admiration.

By this course he in no wise compromises either himself or the lady, but leaves open to both, at any future period, an opportunity of retiring from the position of courtship taken up on the one side, and of receiving addresses on the other, without laying either party open to the accusation of fickleness or jilting.

What the Lady should observe during Courtship.

A lady should be particular during the early days of courtship—while still retaining some clearness of mental vision—to observe the manner in which her suitor comports himself to other ladies. If he behave with ease and courtesy, without freedom or the slightest approach to license in manner or conversation ; if he never speak slightingly of the sex, and

is ever ready to honour its virtues and defend its weakness ; she may continue to incline towards him a willing ear. His habits and his conduct must awaken her vigilant attention before it be too late. Should he come to visit her at irregular hours ; should he exhibit a vague or wandering attention—give proofs of a want of punctuality—show disrespect for age—sneer at things sacred, or absent himself from regular attendance at divine service—or evince an inclination to expensive pleasures beyond his means, or to low and vulgar amusements ; should he be foppish, eccentric, or very slovenly in his dress ; or display a frivolity of mind, and an absence of well-directed energy in his worldly pursuits ; let the young lady, we say, while there is yet time, eschew that gentleman's acquaintance, and allow it gently to drop. The effort, at whatever cost to her feelings, must be made, if she have any regard for her future happiness and self-respect. The proper course then to take is to intimate her distaste, and the causes that have given rise to it, to her parents or guardian, who will be pretty sure to sympathize with her, and to take measures for facilitating the retirement of the gentleman from his pretensions.

What the Gentleman should observe during Courtship.

It would be well also for the suitor, on his part, during the first few weeks of courtship, carefully to observe the conduct of the young lady in her own family, and the degree of estimation in which she is held by them, as well as among her intimate friends. If she be attentive to her duties ; respectful and affectionate to her parents ; kind and forbearing to her brothers and sisters ; not easily ruffled in temper ; if her mind be prone to cheerfulness and to hopeful aspiration, instead of to the display of a morbid anxiety and dread of coming evil ; if her pleasures and enjoyments be those which chiefly centre in home ; if her words be characterized by benevolence, goodwill, and charity : then we say, let him not hesitate, but hasten to enshrine so precious a gem in the casket of his affections. But if, on the other hand, he should find that he has been attracted by the tricksome affectation and heartless allurements of a flirt, ready to bestow smiles on all, but with a heart for none ; if she who has succeeded for a time in fascinating him be of uneven temper, easily provoked, and slow to be appeased ; fond of showy dress, and eager for admiration ; ecstatic about trifles, frivolous in her tastes, and weak and wavering in performing her duties ; if her religious observances are merely the formality of lip-service ; if she be petulant to her friends, pert and disrespectful to her parents, overbearing to her inferiors ; if pride, vanity,

and affectation be her characteristics ; if she be inconstant in her friendships ; gaudy and slovenly, rather than neat and scrupulously clean, in attire and personal habits ; then we counsel the gentleman to retire as speedily, but as politely, as possible from the pursuit of an object unworthy of his admiration and love ; nor dread that the lady's friends—who must know her better than he can do—will call him to account for withdrawing from the field.

But we will take it for granted that all goes on well ; that the parties are, on sufficient acquaintance, pleased with each other, and the gentleman is eager to prove the sincerity of his affectionate regard by giving some substantial token of his love and homage to the fair one. This brings us to the question of

Presents,

a point on which certain observances of etiquette must not be disregarded. A lady, for instance, cannot with propriety accept presents from a gentleman *previously* to his having made proposals of marriage. She would by so doing incur an obligation at once embarrassing and unbecoming. Should, however, the gentleman insist on making her a present —as some trifling object of jewellery, etc.—there must be no secret about it. Let the young lady take an early opportunity of saying to her admirer, in the presence of her father or mother, "I am much obliged to you for that ring (or other trinket, as the case may be) which you kindly offered me the other day, and which I shall be most happy to accept, if my parents do not object ;" and let her say this in a manner which, while it increases the obligation, will divest it altogether of impropriety, from having been conferred under the sanction of her parents.

We have now reached that stage in the progress of the Courtship, where budding affection, having developed into mature growth, encourages the lover to make

The Proposal.

When about to take this step, the suitor's first difficulty is how to get a favourable opportunity ; and next, having got the chance, how to screw his courage up to give utterance to the "declaration." A declaration in writing should certainly be avoided where the lover can by any possibility get at the lady's ear. But there are cases where this is so difficult that an impatient lover cannot be restrained from adopting the agency of a *billet-doux* in declaring his passion.

The lady, before proposal, is generally prepared for it. It is seldom that such an avowal comes without some previous indications of look and manner on the part of the admirer, which can hardly fail of being understood. She may not, indeed, consider herself engaged ; and although nearly certain of the conquest she has made, may yet have her misgivings. Some gentlemen dread to ask, lest they should be refused. Many pause just at the point, and refrain from anything like ardour in their professions of attachment, until they feel confident that they may be spared the mortification and ridicule that is supposed to attach to being rejected, in addition to the pain of disappointed hope. This hesitation when the mind is made up is wrong ; but it does often occur, and we suppose ever will do so, with persons of great timidity of character. By it both parties are kept needlessly on the fret, until the long-looked-for opportunity unexpectedly arrives, when the flood-gates of feeling are loosened, and the full tide of mutual affection gushes forth uncontrolled. It is, however, at this moment—the agony-point to the embarrassed lover, who "doats yet doubts"—whose suppressed feelings rendered him morbidly sensitive —that a lady should be especially careful lest any show of either prudery or coquetry on her part should lose to her forever the object of her choice. True love is generally delicate and timid, and may easily be scared by affected indifference, through feelings of wounded pride. A lover needs very little to assure him of the reciprocation of his attachment : a glance, a single pressure of the hand, a whispered syllable, on the part of the loved one, will suffice to confirm his hopes.

Refusal by the Young Lady.

When a lady rejects the proposal of a gentleman, her behaviour should be characterized by the most delicate feeling toward one who, in offering her his hand, has proved his desire to confer upon her, by this implied preference for her above all other women, the greatest honour it is in his power to offer. Therefore, if she have no love for him, she ought at least to evince a tender regard for his feelings ; and in the event of her being previously engaged, should at once acquaint him with the fact. No right-minded man would desire to persist in a suit, when he well knew that the object of his admiration had already disposed of her heart.

When a gentleman makes an offer of his hand by letter, the letter must be answered, and certainly not returned, should the answer be a refusal ; unless, indeed, when from a previous repulse, or some other particular and special circumstance, such an offer may be regarded by the lady or her

relatives as presumptuous and intrusive. Under such circumstances, the letter may be placed by the lady in the hands of her parents or guardian, to be dealt with by them as they may deem most advisable.

No woman of proper feeling would regard her rejection of an offer of marriage from a worthy man as a matter of triumph; her feeling on such an occasion should be one of regretful sympathy with him for the pain she is unavoidably compelled to inflict. Nor should such a rejection be unaccompanied with some degree of self-examination on her part, to discern whether any lightness of demeanour or tendency to flirtation may have given rise to a false hope of her favouring his suit. At all events, no lady should ever treat the man who has so honoured her with the slightest disrespect or frivolous disregard, nor ever unfeelingly parade a more favoured suitor before one whom she has refused.

Conduct of a Gentleman when his Addresses are Rejected.

The conduct of the gentleman under such distressing circumstances should be characterized by extreme delicacy and a chivalrous resolve to avoid occasioning any possible annoyance or uneasiness to the fair author of his pain. If, however, he should have reason to suppose that his rejection has resulted from mere indifference to his suit, he need not altogether retire from the field, but may endeavour to kindle a feeling of regard and sympathy for the pateint endurance of his disappointment, and for his continued but respectful endeavours to please the lukewarm fair one. But in case of avowed or evident preference for another, it becomes imperative upon him, as a gentleman, to withdraw at once, and so relieve the lady of any obstacle, that his presence or pretensions may occasion, to the furtherance of her obvious wishes. A pertinacious continuance of his attentions, on the part of one who has been distinctly rejected, is an insult deserving of the severest reprobation. Although the weakness of her sex, which ought to be her protection, frequently prevents a woman from forcibly breaking off an acquaintance thus annoyingly forced upon her, she rarely fails to resent such impertinence by that sharpest of woman's weapons, a keen-edged but courteous ridicule, which few men can bear up against.

Refusal by the Lady's Parents or Guardians.

It may happen that both the lady and her suitor are willing, but that the parents or guardians of the former, on being referred to, deem the connection unfitting, and refuse their consent. In this state of matters,

the first thing a man of sense, proper feeling, and candour should do, is to endeavour to learn the objections of the parents, to see whether they cannot be removed. If they are based upon his present insufficiency of means, a lover of a persevering spirit may effect much in removing apprehension on that score, by cheerfully submitting to a reasonable time of probation, in the hope of amelioration in his worldly circumstances. Happiness delayed will be none the less precious when love has stood the test of constancy and the trial of time. Should the objection be founded on inequality of social position, the parties, if young, may wait until matured age shall ripen their judgment and place the future more at their own disposal. A clandestine marriage should be peremptorily declined. In too many cases it is a fraud committed by an elder and more experienced party upon one whose ignorance of the world's ways, and whose confiding tenderness appeal to him for protection even against himself. In nearly all the instances we have known of such marriages, the result proved the step to have been ill-judged, imprudent, and highly injurious to the reputation of one party, and in the long run detrimental to the happiness of both.

Conduct of the Engaged Couple.

The conduct of the bridegroom-elect should be marked by a gallant and affectionate assiduity towards his lady-love—a *denouement* easily felt and understood, but not so easy to define. That of the lady towards him should manifest delicacy, tenderness, and confidence : while looking for his thorough devotion to herself, she should not captiously take offence and show airs at his showing the same kind of attention to other ladies as she, in her turn, would not hesitate to receive from the other sex.

In the behaviour of a gentleman towards his betrothed in public, little difference should be perceptible from his demeanour to other ladies, except in those minute attentions which none but those who love can properly understand or appreciate.

In private, the slightest approach to indecorous familiarity must be avoided ; indeed it is pretty certain to be resented by every woman who deserves to be a bride. The lady's honour is now in her lover's hands, and he should never forget in his demeanour to and before her that that lady is to be his future wife.

It is the privilege of the betrothed lover, as it is also his duty, to give advice to the fair one who now implicitly confides in him. Should he detect a fault, should he observe failings which he would wish removed

or amended, let him avail himself of this season, so favourable for the frank interchange of thought between the betrothed pair, to urge their correction. He will find a ready listener; and any judicious counsel offered to her by him will now be gratefully received, and remembered in after life. After marriage it may be too late; for advice on trivial points of conduct may then not improbably be resented by the wife as an unnecessary interference; now, the fair and loving creature is disposed like pliant wax in his hands to mould herself to his reasonable wishes in all things.

Conduct of the Lady during her Betrothal.

A lady is not expected to keep aloof from society on her engagement, nor to debar herself from the customary attentions and courtesies of her male acquaintances generally; but she should, while accepting them cheerfully, maintain such a prudent reserve, as to intimate that they are viewed by her as mere acts of ordinary courtesy and friendship. In all places of public amusement—at balls, the opera, etc,—for a lady to be seen with any other cavalier than her avowed lover, in close attendance upon her, would expose her to the imputation of flirtation. She will naturally take pains at such a period to observe the taste of her lover in regard to her costume, and strive carefully to follow it, for all men desire to have their taste and wishes on such apparent trifles gratified. She should at the same time observe much delicacy in regard to dress, and be careful to avoid any unseemly display of her charms; lovers are naturally jealous of observation under such circumstances. It is a mistake not seldom made by women, to suppose their suitors will be pleased by the glowing admiration expressed by other men for the object of *their* passion. Most lovers, on the contrary, we believe, would prefer to withdraw their prize from general observation until the happy moment for their union has arrived.

Conduct of the Gentleman towards the Family of his Betrothed.

The lover, having now secured his position, should use discretion and tact in his intercourse with the lady's family, and take care that his visits be not deemed too frequent—so as to be really inconvenient to them. He should accommodate himself as much as possible to their habits and ways, and be ever ready and attentive to consult their wishes. Marked attention, and in most cases affectionate kindness, to the lady's mother ought to be shown; such respectable homage will secure for him many advantages

in his present position. He must not, however, presume to take his stand yet as a member of the family, nor exhibit an obtrusive familiarity in manner and conversation. Should a disruption of the engagement from some unexpected cause ensue, it is obvious that any such premature assumption would lead to very embarrassing results. In short, his conduct should be such as to win for himself the esteem and affection of all the family, and dispose them ever to welcome and desire his presence, rather than regard him as an intruder.

Conduct of the Lady on Retiring from her Engagement.

Should this step unhappily be found necessary on the lady's part, the truth should be spoken, and the reasons frankly given; there must be no room left for the suspicion of its having originated in caprice or injustice. The case should be so put that the gentleman himself must see and acknowledge the justice of the painful decision arrived at. Incompatible habits, ungentlemanly actions, anything tending to diminish that respect for the lover which should be felt for the husband; inconstancy, ill-governed temper—all of which, not to mention other obvious objections—are to be considered as sufficient reasons for terminating an engagement. The communication should be made as tenderly as possible; room may be left in mere venial cases for reformation; but all that is done must be so managed that not the slightest shadow of fickleness or want of faith may rest upon the character of the lady. It must be remembered, however, that the termination of an engagement by a lady has the privilege of passing unchallenged; a lady not being *bound* to declare any other reason than her will. Nevertheless she owes it to her own reputation that her decision should rest on a sufficient foundation, and be unmistakably pronounced.

Conduct of the Gentleman on Retiring from his Engagement.

We hardly know how to approach this portion of our subject. The reasons must be strong indeed that can sufficiently justify a man, placed in the position of an accepted suitor, in severing the ties by which he has bound himself to a lady with the avowed intention of making her his wife. His reasons for breaking off his engagement must be such as will not merely satisfy his own conscience, but will justify him in the eyes of the world. If the fault be on the lady's side, great reserve and delicacy will be observed by any man of honour. If, on the other hand, the imperative force of circumstances, such as loss of fortune, or some other unex-

pected calamity to himself, may be the cause, then must the reason be clearly and fully explained, in such a manner as to soothe the painful feelings which such a result must necessarily occasion to the lady and her friends. It is scarcely necessary to point out the necessity for observing great caution in all that relates to the antecedents of an engagement that has been broken off; especially the return on either side of presents and of all letters that have passed.

This last allusion brings us to the consideration of

Correspondence.

Letter-writing is one great test of ability and cultivation, as respects both sexes. The imperfection of education may be to some extent concealed or glossed over in conversation, but cannot fail to stand out conspicuously in a letter. An ill-written letter infallibly betrays the vulgarity and ignorance indicative of a mean social position.

But there is something more to be guarded against than even bad writing and worse spelling in a correspondence: *saying too much*—writing that kind of matter which will not bear to be read by other eyes than those for which it was originally intended. That this is too frequently done is amply proved by the love letters often read in a court of law, the most affecting passages from which occasion "roars of laughter" and the derisive comments of merry-making counsel. Occurrences of this kind prove how frequently letters are not returned or burned when an affair of the heart is broken off. Correspondence between lovers should at all events be tempered with discretion; and on the lady's part particularly, her affectionate expressions should not degenerate into a silly style of fondness.

It is as well to remark here, that in correspondence between a couple not actually engaged, the use of Christian names in addressing each other should be avoided.

Demeanour of the Suitor during Courtship.

The manners of a gentleman are ever characterized by urbanity and a becoming consideration for the feelings and wishes of others, and by a readiness to practise self-denial. But the very nature of courtship requires the fullest exercise of these excellent qualities on his part. The lover should carefully accommodate his tone and bearing, whether cheerful or serious, to the mood for the time of his lady-love, whose slightest wish must be his law. In his assiduities to her he must allow of no stint;

though hindered by time, distance, or fatigue, he must strive to make his professional and social duties bend to his homage at the shrine of love. All this can be done, moreover, by a man of excellent sense with perfect propriety. Indeed, the world will not only commend him for such devoted gallantry, but will be pretty sure to censure him for any short-coming in his performance of such devoirs.

It is, perhaps, needless to observe that at such a period a gentleman should be scrupulously neat, without appearing particular, in his attire. We shall not attempt to prescribe what he should wear, as that must, of course, depend on the times of the day when his visits are paid, and other circumstances, such as meeting a party of friends, going to the theatre, etc., with the lady.

Should the Courtship be Short or Long?

The answer to this question must depend on the previous acquaintanceship, connection, or relation of the parties, as well as on their present circumstances, and the position of their parents. In case of relationship or old acquaintanceship subsisting between the families, when the courtship, declaration, and engagement have followed each other rapidly, a short wooing is preferable to a long one, should other circumstances not create an obstacle. Indeed, as a general rule, we are disposed strongly to recommend a short courtship. A man is never well settled in the saddle of his fortunes until he be married. He wants spring, purpose, and aim; and, above all, he wants a *home* as the centre of his efforts. Some portion of inconvenience, therefore, may be risked to obtain this; in fact, it often occurs that by waiting too long the freshness of life is worn off, and that the generous glow of early feelings becomes tamed down to lukewarmness, by a too prudent delaying; while a slight sacrifice of ambition or self-indulgence on the part of the gentleman, and a little descent from pride of station on the lady's side, might have insured years of satisfied love and happy wedded life.

On the other hand, we would recommend a long courtship as advisable when—the friends on both sides favouring the match—it happens that the fortune of neither party will prudently allow an immediate marriage. The gentleman, we will suppose, has his way to make in his profession or business, and is desirous not to involve the object of his affection in the distressing inconvenience, if not the misery, of straightened means. He reflects that for a lady it is an actual degradation, however love may ennoble the motive of her submission, to descend from her former footing in

society. He feels, therefore, that this risk ought not to be incurred. For, although the noble and loving spirit of a wife might enable her to bear up cheerfully against misfortune, and by her endearments soothe the broken spirit of her husband; yet the lover who would wilfully, at the outset of wedded life, expose his devoted helpmate to the ordeal of poverty, would be deservedly scouted as selfish and unworthy. These, then are among the circumstances which warrant a lengthened engagement, and it should be the endeavour of the lady's friends to approve such cautious delay, and do all they can to assist the lover in his efforts to abridge it. The lady's father should regard the lover in the light of another son added to the family, and spare no pains to promote his interests in life, while the lady's mother should do everything in her power, by those small attentions which a mother understands so well, to make the protracted engagement agreeable to him, and as endurable as possible to her daughter.

Preliminary Etiquette of a Wedding.

Whether the term of courtship may have been long or short—according to the requirements of the case—the time will at last arrive for

Fixing the Day.

While it is the gentleman's province to press for the earliest possible opportunity, it is the lady's privilege to name the happy day; not but that the bridegroom-elect must, after all, issue the fiat, for he has much to consider and prepare for beforehand: for instance, to settle where it will be most convenient to spend the honeymoon—a point which must depend on the season of the year, on his own vocation, and other circumstances. At this advanced state of affairs, we must not overlook the important question of

The Bridal Trousseau and the Wedding Presents.

Wedding presents must be sent always to the *bride*, never to the bridegroom, though they be given by the friends of the latter. They should be sent during the week previous to the wedding day, as it is customary to display them before the ceremony.

Two cards folded in the invitation in the envelope are sent with the wedding invitation. The invitation is in the name of the bride's mother, or, if she is not living, the relative or friend nearest the bride:

Mrs. Thos. Langton

AT HOME,

Tuesday, November 18*th*,

FROM 11 TILL 2 O'CLOCK.

No. 86, CHURCH STREET.

The two cards, one large and one small, are folded in this invitation. Upon the large card is engraved:

Mr. and Mrs. Edward Blake.

On the smaller one:

Miss Maggie Wallace.

If the young people "receive" after their return from the bridal tour, and there is no wedding-day reception, the following card is sent out:

Mr. and Mrs. Edward Blake

AT HOME,

Thursday, December 28*th*,

FROM 11 TILL 2 O'CLOCK.

No. 50 ISABELLA STREET.

Or,

Mr. and Mrs. Edward Blake

AT HOME,

Thursdays in December,

FROM 11 TILL 2 O'CLOCK.

No. 50 ISABELLA STREET.

The bridal calls are not expected to be returned until the last day of reception.

The bridegroom gives to the first groomsman the control of the ceremony and money for the necessary expenses. The first groomsman presents the bouquet for the bride, leads the visitors up to the young couple for the words of congratulation, gives the clergyman his fee, engages the

carriages, secures tickets, checks baggage, secures pleasant seats, if the happy pair start by rail for the "moon"; and, in short, makes all arrangements.

If the wedding takes place in the church, the front seats in the body of the church are reserved for the relatives of the young couple. The bride must not be kept waiting. The clergyman should be within the rails, the bridegroom and groomsmen should be in the vestry-room by the time the bride is due at the church. The bridesmaids should receive the bride in the vestibule.

The bridal party meets in the vestry-room. Then the bride, leaning on the arm of her father, leads the procession; the bridegroom, with the bride's mother upon his arm, follows; then groomsmen and bridesmaids in couples follow.

At the altar the bridegroom receives the bride, and the ceremony begins. The groomsmen stand behind the bridegroom, and the bridesmaids behind the bride. In some churches, the bride and bridegroom remove the right-hand glove; in others it is not considered essential. The bride stands on the left of the groom.

When the wedding takes place at the house of the bride, the bridal party is grouped behind folding doors or curtains ere their friends see them. If, however, this is not convenient, they enter in the same order as in church.

The first bridesmaid removes the bride's left-hand glove for the ring.

After the ceremony, the bride and groom go in the same carriage from the church to the house, or from the house to the railway depot or boat.

The bride does not change her dress until she assumes her travelling dress. Her wedding gown is worn at the breakfast.

Friends of the family should call upon the mother of the bride during the two weeks after the wedding.

Mourning must not be worn at a wedding. Even in the case of a widowed mother to either of the happy pair, it is customary to wear gray, or some neutral tint.

It is no longer the fashion at a wedding or wedding reception to congratulate the bride; it is the bridegroom who receives congratulations; the bride wishes for her future happiness. The bride is spoken to first.

The day being fixed for the wedding, the bride's father now presents her with a sum of money for her trousseau, according to her rank in life. A few days previously to the wedding, presents are also made to the bride by relations and intimate friends, varying in amount and value according to their various degrees of relationship and friendship—such as plate, fur-

niture, jewellery, and articles of ornament as well as of utility, to the newly-married lady in her future station. These, together with her wedding dresses, etc., it is customary to exhibit to the intimate friends of the bride a day or two before her marriage.

Duty of a Bridegroom-Elect.

The bridegroom-elect has, on the eve of matrimony, no little business to transact. His first care is to look after a house suitable for his future home, and then, assisted by the taste of his chosen helpmate, to take steps to furnish it in a becoming style. He must also, if engaged in business, make arrangements for a month's absence; in fact, bring together all matters into a focus, so as to be readily manageable when, after the honeymoon, he shall take the reins himself. He will do well to burn most of his bachelor letters, and to part with, it may be, some few of his bachelor connections; and he should communicate, in an easy, informal way, to his acquaintances generally, the close approach of so important a change in his condition. Not to do this might hereafter lead to inconvenience, and cause no little annoyance.

We must now speak of

Buying the Ring.

It is the gentleman's business to buy the ring; *and let him take special care not to forget it*, for such an awkward mistake has frequently happened. The ring should be, we need scarcely say, of the very purest gold, but substantial. There are three reasons for this; first, that it may not break—a source of great trouble to the young wife; secondly, that it may not slip off the finger without being missed—few husbands being pleased to hear that their wives have lost their wedding rings; and thirdly, that it may last out the lifetime of the loving recipient, even should that life be protracted to the extreme extent. To get the right size required is not one of the least interesting of the delicate mysteries of love. A not unusual method is to get a sister of the fair one to lend one of the lady's rings to enable the jeweller to select the proper size. Care must be taken, however, that it is not too large. Some audacious suitors, rendered bold by their favoured position, have been even known presumptuously to try the ring on the patient finger of the bride-elect; and it has rarely happened in such cases that the ring has been refused, or sent back to be changed.

Who should be asked to the Wedding.

The wedding should take place at the house of the bride's parents or guardians. The parties who ought to be asked are the father and mother of the gentleman, the brothers and sisters (their wives and husbands also, if married), and indeed the immediate relations and favoured friends of both parties. Old family friends on the bride's side should also receive invitations—the *rationale* or original intention of this wedding assemblage being to give publicity to the fact that the bride is leaving her paternal home with the consent and approbation of her parents.

On this occasion the bridegroom has the privilege of asking any friends he may choose to the wedding; but no friend has a right to feel affronted at not being invited, since, were all the friends on either side assembled, the wedding breakfast would be an inconveniently crowded reception rather than an impressive ceremonial. It is, however, considered a matter of friendly attention on the part of those who cannot be invited, to be present at the ceremony in the church.

Who should be Bridesmaids.

The bridesmaids should include the unmarried sisters of the bride; but it is considered an anomaly for an elder sister to perform this function. The pleasing novelty for several years past of an addition to the number of bridesmaids, varying from two to eight, and sometimes more, has added greatly to the interest in weddings, the bride being thus enabled to diffuse a portion of her own happiness among the most intimate of her younger friends. One lady is always appointed principal bridesmaid, and has the bride in her charge; it is also her duty to take care that the other bridesmaids have the wedding favours in readiness. On the second bridesmaid devolves, with her principal, the duty of sending out the cards; and on the third bridesmaid, in conjunction with the remaining beauties of her choir, the onerous office of attending to certain ministrations and mysteries connected with the wedding cake.

Of the Bridegroomsmen.

It behooves a bridegroom to be exceedingly particular in the selection of his friends who, as groomsmen, are to be his companions and assistants on the occasion of his wedding. Their number is limited to that of the bridesmaids—one for each. It is unnecessary to add that very much of the social pleasure of the day will depend on their proper mating. Young

and unmarried they must be, handsome they should be, good-humoured they cannot fail to be, well-dressed they will of course take good care to be. Let the bridegroom diligently con over his circle of friends, and select the comeliest and the pleasantest fellows for his own train. The principal bridegroomsman, styled his "best man," has, for the day, the special charge of the bridegroom; and the last warning we would give him is, to take care that, when the bridegroom puts on his wedding waistcoat, he does not omit to put the wedding ring into the corner of the left-hand pocket. The dress of a groomsman should be light and elegant; a dress-coat, formerly considered indispensable, is no longer adopted.

Etiquette of a Wedding.

The parties being assembled on the wedding morning in the drawing-room of the residence of the bride's father (unless, as sometimes happens, the breakfast is spread in that room), the happy *cortège* should proceed to the church in the following order:

In the first carriage, the bride's mother and the parents of the bridegroom.

In the second and third carriages, bridesmaids.

Other carriages with the bride's friends.

In the last carriage, the bride and her father.

Costume of the Bride.

A bride's costume should be white, or some hue as close as possible to it.

Costume of the Bridegroom.

Formerly it was not considered to be in good taste for a gentleman to be married in a black coat. More latitude is now allowed in the costume of the bridegroom, the style now adopted being what is termed morning dress: a frock coat, light trowsers, white waistcoat, ornamental tie, and white or gray gloves.

The Marriage Ceremony.

The bridegroom stands at the right hand of the bride. The father stands just behind her, so as to be in readiness to give her hand at the proper moment to the bridegroom. The principal bridesmaid stands on the left of the bride, ready to take off the bride's glove, which she keeps as a perquisite and prize of her office.

The Words "I Will"

are to be pronounced distinctly and audibly by both parties, such being the all-important part of the ceremony as respects themselves; the public delivery, before the priest, by the father of his daughter to the bridegroom, being an evidence of his assent; the silence which follows the inquiry for "cause or just impediment" testifying that of society in general; and the "I will" being the declaration of the bride and bridegroom that they are voluntary parties to their holy union in marriage.

The Words "Honour and Obey"

must also be distinctly spoken by the bride. They constitute an essential part of the obligation and contract of matrimony on her part.

After the Ceremony.

the clergyman usually shakes hands with the bride and bridegroom, and the bride's father and mother, and a general congratulation ensues.

The Return Home.

The bridegroom now leads the bride out of the church, and the happy pair return homeward in the first carriage. The father and mother follow in the next. The rest "stand not on the order of their going," but start off in such wise as they can best contrive.

The Wedding Breakfast.

The bride and bridegroom sit together at the centre of the table, in front of the wedding cake, the clergyman who performed the ceremony taking his place opposite to them. The top and bottom of the table are occupied by the father and mother of the bride. The principal bridesmaid sits to the left of the bride, and the principal bridegroomsman on the left of the bridegroom. It may not be necessary to say that it is customary for the ladies to wear their bonnets just as they came from the church. The bridesmaids cut the cake into small pieces, which are not eaten until the health of the bride is proposed. This is usually done by the officiating clergyman, or by an old and cherished friend of the family of the bridegroom. The bridegroom returns thanks for the bride and for himself. The health of the bride's parents is then proposed, and is followed by those

of the principal personages present, the toast of the bridesmaids being generally one of the pleasantest features of the festal ceremony. After about two hours, the principal bridesmaid leads the bride out of the room as quietly as possible, so as not to disturb the party or attract attention. Shortly after—it may be in about ten minutes—the absence of the bride being noticed, the rest of the ladies retire. Then it is that the bridegroom has a few *melancholy* moments to bid adieu to his bachelor friends, and he then generally receives some hints on the subject in a short address from one of them, to which he is of course expected to respond. He then withdraws for a few moments, and returns after having made a slight addition to his toilet, in readiness for travelling.

Departure for the Honeymoon.

The young bride, divested of her bridal attire, and quietly costumed for the journey, now bids farewell to her bridesmaids and lady friends. A few tears spring to her gentle eyes as she takes a last look at the home she is now leaving. The servants venture to crowd about her with their humble but heartfelt congratulations; finally, she falls weeping on her mother's bosom. A short cough is heard, as of some one summoning up resolution to hide emotion. It is her father. He dares not trust his voice; but holds out his hand, gives her an affectionate kiss, and then leads her, half turning back, down the stairs and through the hall, to the door, where he delivers her as a precious charge to her husband, who hands her quickly into the carriage, springs in after her, waves his hand to the party who appear crowding at the window, half smiles at the throng about the door, then, amidst a shower of old slippers—missiles of good-luck sent flying after the happy pair—gives the word, and they are off, and started on the long-hoped-for voyage!

The Language of Flowers.

HOW the universal heart of man blesses flowers! They are wreathed round the cradle, the marriage-altar, and the tomb. The Persian in the far East delights in their perfume, and writes his love in nosegays; while the Indian child of the far West claps his hands with glee as he gathers the abundant blossoms,—the illuminated scriptures of the prairies. The Cupid of the ancient Hindoos tipped his arrows with flowers, and orange-flowers are a bridal crown with us, a nation of yesterday. Flowers garlanded the Grecian altar, and hung in votive wreath before the Christian shrine. All these are appropriate uses. Flowers should deck the brow of the youthful bride, for they are in themselves a lovely type of marriage. They should twine round the tomb, for their perpetually renewed beauty is a symbol of the resurrection. They should festoon the altar, for their fragrance and their beauty ascend in perpetual worship before the Most High.

Flowers have a language of their own, and it is this bright particular language that we would teach our readers. How charmingly a young gentleman can speak to a young lady, and with what eloquent silence in this delightful language. How delicately she can respond, the beautiful little flowers telling her tale in perfumed words; what a delicate story the myrtle or the rose tells! How unhappy that which bazil, or the yellow rose reveals, while ivy is the most faithful of all.

ALMOND—HOPE.

The hope, in dreams of a happier hour,
That alights upon misery's brow,
Springs out of the silvery almond flower,
That blooms on a leafless bough.

Abecedary.....Volubility.
Abatina.....Fickleness
Acacia.....Friendship.
Acacia, Rose or White...Elegance.
Acacia, Yellow.....Secret love
Acanthus.....The fine arts. Artifice.
Acalia.....Temperance
Achillea Millefolia.....War.
Aconite (Wolfsbane)....Misanthropy
Aconite, Crowfoot.....Lustre.
Adonia, Flos.....Painful recollections.
African Marigold.....Vulgar minds.
Agnus Castus.....Coldness. Indifference.
Agrimony.....Thankfulness. Gratitude.
Almond (Common).....Stupidity, Indiscretion.
Almond (Flowering).....Hope.
Almond, Laurel.....Perfidy.

Allspice.....Compassion.
Aloe.....Grief. Religious superstition.
Althæa Frutex (Syrian Mallow).....Persuasion.
Alyssum (Sweet).....Worth beyond beauty
Amaranth (Globe).....Immortality. Unfading love.
Amaranth (Cockscomb)..Foppery. Affectation.
Amaryllis.....Pride. Timidity. Splendid beauty.
Ambrosia.....Love returned.
American Cowslip.....Divine beauty.
American Elm.....Patriotism.
American Linden.....Matrimony.
American Starwort.....Welcome to stranger. Cheerfulness in old age.
Amethyst.....Admiration.
Anemone (ZephyrFlower)Sickness. Expectation.
Anemone (Garden).....Forsaken.
Angelica.....Inspiration.
Angrec.....Royalty.
Apple.....Temptation.
Apple (Blossom).....Preference. Fame speaks him great and good.
Apple, Thorn.....Deceitfulcharms
Apocynum (Dog Vane)...Deceit.
Arbor Vitæ.....Unchanging friendship. Live for me.
Arem (Wake Robin)....Ardour.
Ash-leaved Trumpet Flower.....Separation.
Ash Tree.....Grandeur.
Aspen Tree.....Lamentation.
Aster (China).....Variety. Afterthought.
Asphodel.....My regrets follow you to the grave.
Auricula.....Painting.
Auricula, Scarlet.....Avarice.
Austurtium.....Splendour.
Azalea.....Temperance.

Bachelor's Buttons.....Celibacy.
Balm.....Sympathy.
Balm, Gentle.....Pleasantry.
Balm of Gilead.....Cure. Relief.
Balsam, Red.....Touch me not. Impatient resolves.
Balsam, Yellow.....Impatience.
Barberry.....Sourness of temper.
Barberry Tree.....Sharpness.
Basil.....Hatred.
Bay Leaf.....I change but in death.
Bay (Rose) RhododendronDanger. Beware.
Bay Tree.....Glory.
Bay Wreath.....Reward of merit
Bearded Crepis.....Protection.
Beech Tree.....Prosperity.
Bee Orchis.....Industry.
Bee Ophrys.....Error.
Belladonna.....Silence.
Bell Flower, Pyramidical Constancy.
Bell Flower (small white)Gratitude.
Belvedere.....I declare against you.
Betony.....Surprise.
Bilberry.....Treachery.
Bindweed, Great.....Insinuation.
Bindweed, Small.....Humility.
Birch.....Meekness.
Birdsfoot, Trefoil.....Revenge.
Bittersweet: Nightshade.Truth.
Black Poplar.....Courage.
Blackthorn.....Difficulty.
Bladder Nut Tree.....Frivolity. Amusement.
Bluebottle (Century)....Delicacy.
Bluebell.....Constancy.
Blue-flowered Greek Valerian.....Rupture.
Bonus Henricus.....Goodness.
Borage.....Bluntness.
Box Tree.....Stoicism.
Bramble.....Lowliness. Envy. Remorse.
Branch of Currants.....You please all.
Branch of Thorns.....Severity. Rigour.
Bridal Rose.....Happy love.
Broom.....Humility. Neatness.
Buckbean.....Calm repose.
Bud of White Rose.....Heart ignorant of love.
Bugloss.....Falsehood.
Bulrush.....Indiscretion. Docility.
Bundle of Reeds, with their Panicles.....Music.
Burdock.....Importunity. Touch me not.

Buttercup (Kingcup)....Ingratitude. Childishness.
Butterfly Orchis .....Gaiety.
Butterfly Weed .....Let me go.

Cabbage .....Profit.
Cacalia.....Adulation.
Cactus .....Warmth.
Calla Æthiopica .....Maguificent. Beauty.
Calycanthus.....Benevolence.
Camellia Japonica, Red...Unpretending excellence.
Camellia Japonica, WhitePerfected loveliness.
Camomile.....Energy in adversity.
Canary Grass .....Perseverance.
Candytuft.....Indifference.
Canterbury Bell .....Acknowledgment.
Cape Jasmine .....I'm too happy.
Cardamine .....Paternal error.
Carnation, Deep Red.....Alas ! for my poor heart.
Carnation, Striped .....Refusal.
Carnation, Yellow .....Disdain.
Cardinal Flower .....Distinction.
Catchfly .....Snare.
Catchfly, Red .....Youthful love.
Catchfly, White .....Betrayed.
Cedar .....Strength.
Cedar of Lebanon .....Incorruptible.
Cedar Leaf .....I live for thee.
Celandine (Lesser) .....Joys to come.
Century .....Delicacy.
Cereus (Creeping).....Modest genius.
Champignon.....Suspicion.
Chequered Fritillary.....Persecution.
Cherry Tree.....Good education.
Cherry Tree, White.....Deception.
Chestnut Tree.....Do me justice. Luxury.
Chickweed .....Rendezvous.
Chicory.....Frugality.
China Aster.....Variety.
China Aster, Double.....I partake your sentiments.
China Aster, Single.....I will think of it.
China or Indian Pink.....Aversion.
China Rose.....Beauty always new.
Chinese Chrysanthemum.Cheerfulness under adversity.
Christmas Rose.....Relieve my anxiety.
Chrysanthemum, Red ...I love.
Chrysanthemum, White..Truth.
Chrysanthemum, Yellow.Slighted love.
Cinquefoil .....Maternal affection.
Circæa .....Spell.
Cistus, or Rock Rose....Popular favour.
Cistus, Gum.....I shall die tomorrow.
Citron .....Ill-natured beauty.
Clematis.....Mental beauty.
Clematis, Evergreen.....Poverty.
Clotbur.....Rudeness. Pertinacity.
Cloves.....Dignity.
Clover, Four-leaved.....Be mine.
Clover, Red.....Industry.
Clover, White.....Think of me.
Clobæa .....Gossip.
Cockscomb, Amaranth...Foppery. Affectation. Singularity.
Colchicum, or Meadow Saffron .....My best days are past.
Coltsfoot .....Justice shall be done.
Columbine.....Folly.
Columbine, Purple.....Resolved to win.
Columbine, Red.....Anxious and trembling.
Convolvulus .....Bonds.
Convolvulus, Blue (Minor)Repose. Night.
Convolvulus, Major.....Extinguished hopes.
Convolvulus, Pink.....Worth sustained by judicious and tender affection.
Corchorus .....Impatient of absence.
Coreopsis .....Always cheerful.
Coreopsis Arkansa .....Love at first sight.
Coriander .....Hidden worth.
Corn.....Riches.
Corn, Broken.....Quarrel.
Corn Straw.....Agreement.
Corn Bottle .....Delicacy.
Corn Cockle.....Gentility.
Cornel Tree.....Duration.
Coronella.....Success crown your wishes.
Cowslip.....Pensiveness. Winning grace
Cowslip, American.....Divine beauty. You are my divinity.
Cranberry .....Cure for heartache.

Creeping Cerus.....Horror.
Cress.....Stability. Power.
Crocus .....Abuse not.
Crocus, Spring.....Youthful gladness.
Crocus, Saffron.....Mirth.
Crown Imperial.....Majesty. Power
Crowsbill .....Envy.
Crowfoot .....Ingratitude.
Crowfoot (Aconiteleaved)Lustre.
Cocoa Plant.....Ardour.
Cudweed, American.....Unceasing remembrance.
Currant .....Thy frown will kill me.
Cuscuta.....Meanness.
Cyclamen .....Diffidence.
Cypress.....Death. Mourning.

DAFFODIL—REGARD.

I.

Fair Daffodils, we weep to see
You haste away so soon ;
And yet the early rising sun
Has not attained his noon ;
Stay, stay,
Until the hastening day
Has run
But to the even song,
And, having prayed together, we
Will go with you along.

II.

We have short time to stay as ye,
We have as fleet a spring.
As quick a growth to meet decay
As you or anything ;
We die
As your hours do, and dry
Away,
Like to the summer's rain,
Or as the pearls of morning's dew,
Ne'er to be found again.

Daffodil.....Regard.
Dahlia.....Instability.
Daisy.....Innocence.
Daisy, Garden.....I share your sentiments.
Daisy, Michaelmas.....Farewell.
Daisy, Party-coloured ...Beauty.
Daisy, Wild.....I will think of it.
Damask Rose.....Brilliant complexion.
Dandelion .....Rustic oracle
Daphne, Odora.....Painting the lily
Darnel (Ray Grass).....Vice.
Dead Leaves .....Sadness.
Dew Plant.....A serenade.
Dittany of Crete.....Birth.
Dittany of Crete, White..Passion.
Dock .....Patience.
Dodder of Thyme.....Baseness.
Dogsbane .....Deceit. Falsehood.
Dogwood.....Durability.
Dragon Plant.....Snare.
Dragonwort .....Horror.
Dried Flax.....Utility.

Ebony Tree.....Blackness.
Eglantine (Sweetbriar)....Poetry. I wound to heal.
Elder.....Zealousness.
Elm .....Dignity.
Enchanter's Nightshade..Witchcraft. Sorcery.
Endive .....Frugality.
Eupatorium .....Delay.
Everflowing Candytuft....Indifference.
Evergreen Clematis.....Poverty.
Evergreen Thorn.....Solace in adversity.
Everlasting .....Never ceasing remembrance.

Everlasting Pea.....Lasting pleasure.
Fennel.....Worthy of all praise. Strength.
Fern .....Fascination.
Ficoides, Ice Plant.....Your looks freeze me.
Fig.....Argument.
Fig Marigold.....Idleness.
Fig Tree.....Prolific.
Filbert .....Reconciliation.
Fir .....Time.
Fir Tree.....Elevation.
Flax .....Domestic industry. Fate. I feel your kindness.
Flax-leaved Goldy-locks..Tardiness.
Fleur-de-Lis .....Flame. I burn.
Fleur-de-Luce .....Fire.
Flowering Fern .....Reverie.
Flowering Reed .....Confidence in Heaven.
Flower-of-an-Hour.....Delicate beauty.
Fly Orchis .....Error.

Flytrap ..... Deceit.
Fool's Parsley ..... Silliness.
Forget Me Not ..... True love. Forget me not.
Foxglove ..... Insincerity.
Foxtail Grass ..... Sporting.
French Honeysuckle ..... Rustic beauty.
French Marigold ..... Jealousy.
French Willow ..... Bravery and humanity.
Frog Ophrys ..... Disgust.
Fuller's Teasel ..... Misanthropy.
Fumitory ..... Spleen.
Fuchsia, Scarlet ..... Taste.

Garden Anemone ..... Forsaken.
Garden Chervil ..... Sincerity.
Garden Daisy ..... I partake your sentiments.
Garden Marigold ..... Uneasiness.
Garden Ranunculus ..... You are rich in attractions.
Garden Sage ..... Esteem.
Garland of Roses ..... Reward of virtue.
Germander Speedwell ..... Facility.
Geranium, Dark ..... Melancholy.
Geranium, Ivy ..... Bridal favour.
Geranium, Lemon ..... Unexpected meeting.
Geranium, Nutmeg ..... Expected meeting.
Geranium, Oak-leaved ..... True friendship.
Geranium, Pencilled ..... Ingenuity.
Geranium, Rose-scented ..... Preference.
Geranium, Scarlet ..... Comforting. Stupidity.
Geranium, Silver-leaved ..... Recall.
Geranium, Wild ..... Steadfast piety.
Gilliflower ..... Bonds of affection.
Glory Flower ..... Glorious beauty.
Goat's Rue ..... Reason.
Golden Rod ..... Precaution.
Gooseberry ..... Anticipation.
Gourd ..... Extent. Bulk.
Grape, Wild ..... Charity.
Grass ..... Submission. Utility.
Guelder Rose ..... Winter. Age.

Hand Flower Tree ..... Warning.
Harebell ..... Submission. Grief
Hawkweed ..... Quicksightedness.
Hawthorn ..... Hope.
Hazel ..... Reconciliation.
Heath ..... Solitude.
Helenium ..... Tears.
Heliotrope ..... Devotion. Faithfulness.
Hellebore ..... Scandal. Calumny.
Helmet Flower (Monkshood) ..... Knight-errantry
Hemlock ..... You will be my death.
Hemp ..... Fate.
Henbane ..... Imperfection.
Hepatica ..... Confidence.
Hibiscus ..... Delicate beauty.
Holly ..... Foresight.
Holly Herb ..... Enchantment.
Hollyhock ..... Ambition. Fecundity.
Honesty ..... Honesty. Fascination.
Honey Flower ..... Love, sweet and secret.
Honeysuckle ..... Generous and devoted affection.
Honeysuckle (Coral) ..... The colour of my fate.
Honeysuckle (French) ..... Rustic beauty.
Hop ..... Injustice.
Hornbeam ..... Ornament.
Horse Chestnut ..... Luxury.
Hortensia ..... You are cold.
Houseleek ..... Vivacity, Domestic industry.
Housetonia ..... Content.
Hoya ..... Sculpture.
Humble Plant ..... Despondency.
Hundred-leaved Rose ..... Dignity of mind
Hyacinth ..... Sport. Game. Play.
Hyacinth, White ..... Unobtrusive loveliness.
Hydrangea ..... A Boaster. Heartlessness.
Hyssop ..... Cleanliness.

Iceland Moss ..... Health.
Ice Plant ..... Your looks freeze me.
Imperial Montague ..... Power.
Indian Cress ..... Warlike trophy.
Indian Jasmine (Ipomœa) Attachment.
Indian Pink (Double) ..... Always lovely.
Indian Plum ..... Privation.
Iris ..... Message.
Iris German ..... Flame.
Ivy ..... Fidelity. Marriage.

Ivy, Sprig of, with tendrils.....Assiduous to please.

Jacob's Ladder.....Come down.
Japan Rose.....Beauty is your only attraction.
Jasmine.....Amiability.
Jasmine, Cape.....Transport of joy
Jasmine, Carolina.....Separation.
Jasmine, Indian.....I attach myself to you.
Jasmine, Spanish.....Sensuality.
Jasmine, Yellow.....Grace and elegance.
Jonquil.....I desire a return of affection.
Judas Tree.....Unbelief. Betrayal.
Juniper.....Succour. Protection.
Justicia.....The perfection of female loveliness.

Kennedia.....Mental beauty.
King-cups.....Desire of riches.

Laburnum.....Forsaken. Pensive beauty.
Lady's Slipper.....Capricious beauty. Win me and wear me.
Lagerstræmia, Indian.....Eloquence.
Lantana.....Rigour.
Larch.....Audacity. Boldness.
Larkspur.....Lightness. Levity.
Larkspur, Pink.....Fickleness.
Larkspur, Purple.....Haughtiness.
Laurel.....Glory.
Laurel, Common, in flower.....Perfidy.
Laurel, Ground.....Perseverance.
Laurel, Mountain.....Ambition.
Laurel-leaved Magnolia..Dignity.
Laurestina.....A token. I die if neglected.
Lavender.....Distrust.
Leaves (dead).....Melancholy.
Lemon.....Zest.
Lemon Blossoms.....Fidelity in love.
Lettuce.....Cold-heartedness.
Lichen.....Dejection, Solitude.
Lilac, Field.....Humility.
Lilac, Purple.....First emotions of love.
Lilac, White.....Youthful innocence.
Lily, Day.....Coquetry.
Lily, Imperial.....Majesty.
Lily, White.....Purity. Sweetness.
Lily, Yellow.....Falsehood. Gaicty.
Lily of the Valley.....Return of happiness.
Linden or Lime Trees....Conjugal love.
Lint.....I feel my obligation.
Live Oak.....Liberty.
Liverwort.....Confidence.
Licorice, Wild.....I declare against you.
Lobelia.....Malevolence.
Locust Tree.....Elegance.
Locust Tree (green).....Affection beyond the grave.
London Pride.....Frivolity.
Lote Tree.....Concord.
Lotus.....Eloquence.
Lotus Flower.....Estranged love.
Lotus Leaf.....Recantation.
Love in a mist.....Perplexity.
Love lies Bleeding.....Hopeless, not heartless.
Lucern.....Life.
Lupine.....Voraciousness. Imagination.

Madder.....Calumny.
Magnolia.....Love of nature.
Magnolia, Swamp.....Perseverance.
Mallow.....Mildness.
Mallow, Marsh.....Beneficence.
Mallow, Syrian.....Consumed by love.
Mallow, Venetian.....Delicate beauty.
Manchineal Tree.....Falsehood.
Mandrake.....Horror.
Maple.....Reserve.
Marigold.....Grief.
Marigold, African.....Vulgar minds.
Marigold, French.....Jealousy.
Marigold, Prophetic.....Prediction.
Marigold and Cypress....Despair.
Marjoram.....Blushes.
Marvel of Peru.....Timidity.
Meadow Lychnis.....Wit.
Meadow Saffron.....My best days are past.
Meadowsweet.....Uselessness.
Mercury.....Goodness.

Mesembryanthemum....Idleness.
Mezereon.....Desire to please.
Michaelmas Daisy.....Afterthought.
Mignionette.....Your qualities surpass your charms.
Milfoil.....War.
Milkvetch.....Your presence softens my pains.
Milkwort.....Hermitage.
Mimosa (Sensitive Plant).Sensitiveness.
Mint.....Virtue.
Mistletoe.....I surmount difficulties.
Mock Orange.....Counterfeit.
Monkshood (Helmet Flower).....Chivalry. Knt-errantry.
Moonwort.....Forgetfulness.
Morning Glory.....Affectation.
Moschatel.....Weakness.
Moss.....Maternal love.
Mosses.....Ennui.
Mossy Saxifrage.....Affection.
Motherwort.....Concealed love.
Mountain Ash.....Prudence.
Mourning Bride.....Unfortunate attachment. I have lost all.
Mouse-eared Chickweed..Ingenious simplicity.
Mouse-eared Scorpion Grass.....Forget me not.
Moving Plant.....Agitation.
Mudwort.....Tranquillity.
Mugwort.....Happiness.
Mulberry Tree (Black)...I shall not survive you.
Mulberry Tree (White)...Wisdom.
Mushroom.....Suspicion.
Musk Plant.....Weakness.
Mustard Seed.....Indifference.
Myrobalan.....Privation.
Myrrh.....Gladness.
Myrtle.....Love.

Narcissus.....Egotism.
Nasturtium.....Patriotism.
Nettle Burning.....Slander.
Nettle Tree.....Concert.
Night-blooming Cereus...Transient beauty.
Night Convolvulus.....Night.
Nightshade.....Truth.

Oak Leaves.....Bravery.
Oak Tree.....Hospitality.
Oak (White).....Independence.
Oats.....The witching soul of music.
Oleander.....Beware.
Olive.....Peace.
Orange blossoms.....Your purity equals your loveliness.
Orange Flowers.....Chastity. Bridal festivities.
Orange Tree.....Generosity.
Orchis.....A Belle.
Osier.....Frankness.
Osmunda.....Dreams.
Ox Eye.....Patience.

Palm.....Victory.
Pansy.....Thoughts.
Parsley.....Festivity.
Pasque Flower.....You have no claims.
Passion Flower.....Religious superstition.
Patience Dock.....Patience.
Pea, Everlasting.....An appointed meeting. Lasting pleasures.
Pea, Sweet.....Departure.
Peach.....Your qualities, like your charms, are unequalled.
Peach Blossom.....I am your captive.
Pear.....Affection.
Pear Tree.....Comfort.
Pennyroyal.....Flee away.
Peony.....Shame. Bashfulness.
Peppermint.....Warmth of feeling.
Periwinkle, Blue.....Early friendship
Periwinkle, White.....Pleasures of memory.
Persicaria.....Restoration.
Persimon.....Bury me amid Nature's beauties.
Peruvian Heliotrope.....Devotion.
Pheasant's Eye.....Remembrance.
Phlox.....Unanimity.
Pigeon Berry.....Indifference.
Pimpernel.....Change. Assignation.
Pine.....Pity.
Pine-apple.....You are perfect.
Pine, Pitch.....Philosophy.
Pine, Spruce.....Hope in adversity.

Pink.....Boldness.
Pink, Carnation.....Woman's love.
Pink, Indian, Double.....Always lovely.
Pink, Indian, Single.....Aversion.
Pink, Mountain.....Aspiring.
Pink, Red, Double.....Pure and ardent love.
Pink, Single.....Pure love.
Pink, variegated.....Refusal.
Pink, White.....Ingeniousness, Talent.
Plane Tree.....Genius.
Plum, Indian.....Privation.
Plum Tree.....Fidelity.
Plum, Wild.....Independence.
Polyanthus.....Pride of riches.
Polyanthus, Crimson.....The heart's mystery.
Polyanthus, Lilac.....Confidence.
Pomegranate.....Foolishness.
Pomegranate Flower.....Mature elegance
Poplar, Black.....Courage.
Poplar, White.....Time.
Poppy, Red.....Consolation.
Poppy, Scarlet.....Fantastic extravagance.
Poppy, White.....Sleep. My bane. My antidote.
Potato.....Benevolence.
Prickly Pear.....Satire.
Pride of China.....Dissension.
Primrose.....Early youth.
Primrose, Evening.....Inconstancy.
Primrose, Red.....Unpatronized merit.
Privet.....Prohibition.
Purple, Clover.....Provident.
Pyrus, Japonica.....Fairies' fire.

Quaking-Grass.....Agitation.
Quamoclit.....Busybody.
Queen's Rocket.....You are the Queen of coquettes. Fashion.
Quince.....Temptation.

Ragged Robin.....Wit.
Ranunculus.....You are radiant with charms.
Ranunculus, Garden.....You are rich in attractions.
Ranunculus, Wild.....Ingratitude.
Raspberry.....Remorse.
Ray Grass.....Vice.
Red Catchfly.....Youthful love.
Reed.....Complaisance. Music.
Reed, Split.....Indiscretion.
Rhododendron (Rosebay).....Danger. Beware
Rhubarb.....Advice.
Rocket.....Rivalry.
Rose.....Love.
Rose, Austrian.....Thou art all that is lovely.
Rose, Bridal.....Happy love.
Rose, Burgundy.....Unconscious beauty.
Rose, Cabbage.....Ambassador of love.
Rose, Champion.....Only deserve my love.
Rose, Carolina.....Love is dangerous.
Rose, China.....Beauty always new.
Rose, Christmas.....Tranquillize my anxiety.
Rose, Daily.....Thy smile I aspire to.
Rose, Damask.....Brilliant complexion.
Rose, Deep Red.....Bashful shame.
Rose, Dog.....Pleasure and pain.
Rose, Guelder.....Winter. Age.
Rose, Hundred-leaved.....Pride.
Rose, Japan.....Beauty is your only attraction
Rose, Maiden Blush.....If you love me, you will find it out.
Rose, Multiflora.....Grace.
Rose, Mundi.....Variety.
Rose, Musk.....Capricious beauty.
Rose, Musk, Cluster.....Charming.
Rose, Single.....Simplicity.
Rose, Thornless.....Early attachment.
Rose, Unique.....Call me not beautiful.
Rose, White.....I am worthy of you.
Rose, White (withered).....Transient impressions.
Rose, Yellow.....Decrease of love.
Rose, York and Lancaster.....War. Jealousy.
Rose, Full-blown, placed over two Buds.....Secrecy.
Rose, White and Red together.....Unity.
Roses, Crown of.....Reward of virtue.
Rosebud, Red.....Pure and lovely.

Rosebud, White ..... Girlhood,
Rosebud, Moss..... Confession of love.
Rosebay (Rhododendron) Beware. Danger
Rosemary..... Remembrance.
Rudbeckia ..... Justice.
Rue..... Disdain.
Rush..... Docility.
Rye Grass..... Changeable disposition.

Saffron ..... Beware of excess
Saffron Crocus..... Mirth.
Saffron, Meadow..... My happiest days are past.
Sage..... Domestic virtue
Sage, Garden..... Esteem.
Sainfoin ..... Agitation.
St. John's Wort..... Animosity. Superstition.
Sardony..... Irony.
Saxifrage, Mossy..... Affection.
Scabious..... Unfortunate love.
Scabious, Sweet..... Widowhood.
Scarlet Lychnis..... Sunbeaming eyes.
Schinus ..... Religiousenthusiasm.
Scotch Fir..... Elevation.
Sensitive Plant..... Sensibility. Delicate feelings.
Senvy..... Indifference.
Shamrock..... Light-heartedness.
Snakesfoot..... Horror.
Snapdragon ..... Presumption.
Snowball..... Bound.
Snowdrop..... Hope.
Sorrel..... Affection.
Sorrel, Wild. ..... Wit ill-timed.
Sorrel, Wood..... Joy.
Southernwood..... Jest. Bantering.
Spanish Jasmine..... Sensuality.
Spearmint ..... Warmth of sentiment.
Speedwell..... Female fidelity.
Speedwell, Germander... Facility.
Speedwell, Spiked... Semblance.
Spider Ophrys..... Adroitness.
Spiderwort .. .. Esteem, not love.
Spiked Willow Herb..... Pretension.
Spindle Tree..... Your charms are engraven on my heart.
Star of Bethlehem..... Purity.
Starwort..... Afterthought.
Starwort, American..... Cheerfulness in old age.
Stock ..... Lasting beauty.
Stock, Ten Week..... Promptness.
Stonecrop..... Tranquillity.
Straw, Broken. ..... Rupture of a contract.
Straw, Whole..... Union.
Strawberry Tree..... Esteem & love.
Sumach, Venice..... Splendour. Intellectual excellence.
Sunflower, Dwarf..... Adoration.
Sunflower, Tall..... Haughtiness
Sallow-wort ..... Cure for heartache.
Sweet Basil..... Good wishes.
Sweetbrier, American..... Simplicity.
Sweetbrier, European..... I wound to heal.
Sweetbrier, Yellow..... Decrease of love.
Sweet Pea..... Delicate pleasures.
Sweet Sultan..... Felicity.
Sweet William..... Gallantry.
Sycamore ..... Curiosity.
Syringa..... Memory.
Syringa, Carolina..... Disappointment

Tamarisk ..... Crime.
Tansy (Wild)..... I declare war against you.
Teasel ..... Misanthropy.
Tendrils of Climbing Plants..... Ties.
Thistle, Common ..... Austerity.
Thistle, Fuller's..... Misanthropy.
Thistle, Scotch..... Retaliation.
Thorn, Apple..... Deceitful charm.
Thorn, Branch of..... Severity.
Thrift..... Sympathy.
Throatwort..... Neglected beauty.
Thyme..... Activity.
Tiger Flower..... For once may pride befriend me.
Traveller's Joy..... Safety.
Tree of Life..... Old age.
Trefoil..... Revenge.
Tremelia Nestoc..... Resistance.
Trillium Pictum..... Modest beauty.
Truffle ..... Surprise.
Trumpet Flower..... Fame.
Tuberose..... Dangerous pleasures.
Tulip..... Fame.
Tulip, Red..... Declaration of love.

Tulip, Variegated.....Beautiful eyes.
Tulip, Yellow .....Hopeless love.
Turnip .....Charity.
Tussilage (Sweet-scented)Justice shall be done you.

Valerian .....An accommodating disposition.
Valerian, Greek .....Rupture.
Venice Sumach .....Intellectual excellence. Splendour.
Venus's Car.....Fly with me.
Venus's Looking-glass....Flattery.
Venus's Trap.....Deceit.
Vernal Grass .....Poor, but happy.
Veronica.....Fidelity.
Vervain .....Enchantment.
Vine .....Intoxication.
Violet, Blue.....Faithfulness.
Violet, Dane.....Watchfulness.
Violet, Sweet.....Modesty.
Violet, Yellow.....Rural happiness.
Virginian Spiderwort....Momentary happiness.
Virgin's Bower.....Filial love.
Volkamenia.....May you be happy.

Walnut.....Intellect. Stratagem.
Wall-flower.....Fidelity in adversity.
Water Lily.. .....Purity of heart.
Water Melon .....Bulkiness.
Wax Plant .....Susceptibility.
Wheat Stalk.....Riches.
Whin .....Anger.
White Jasmine.....Amiableness.
White Lily.....Purity and modesty.
White Mullein.....Good nature.
White Oak .....Independence.
White Pink .....Talent.
White Poplar .....Time.
White Rose (dried).....Death preferable to loss of innocence.
Wortleberry.....Treason.
Willow, Creeping.....Love forsaken.
Willow, Water.....Freedom.
Willow, Weeping.....Mourning.
Willow-Herb .....Pretension.
Willow, French.....Bravery and humanity.
Winter Cherry.....Deception.
Witch Hazel.....A spell.
Woodbine.....Fraternal love.
Wood Sorrel.....Joy. Maternal tenderness.
Wormwood .....Absence.

Xanthium.....Rudeness. Pertinacity.
Xeranthemum.....Cheerfulness under adversity.

Yew.....Sorrow.

Zephyr Flower.....Expectation.
Zinnia.....Thoughts of absent friends.

The Letter Writer.

EVERY position in life demands letter-writing. A letter is the great link between parents and children, between lovers, between friends; while in business relations it makes fortunes, or mars them. A good letter must, firstly, be absolutely correct in every mechanical detail; then style comes into question; then the matter, which must be intelligible to the meanest as well as the highest understanding. The great art of letter-writing is to be able to write gracefully and with ease, and no letter should wear the appearance of having been laboriously studied.

The first point to be observed in your letter is that you write in a clear, legible hand, a hand that anybody and everybody can read. You may fill your pages with the most exquisite and sparkling ideas, but if they cannot be read except to the torture of the peruser, your diamond thoughts lose all their glitter, and people to whom you write, instead of being anxious to receive a letter from you, will mentally groan at the very idea of its receipt, knowing the toil and trouble that awaits them in its perusal.

Be patient, then, and plod on steadily until you write a bold, clear, clean hand, and never let a scrap of your writing pass from you that is not carefully executed.

Never erase. It is much better, though wearying the task, to commence all over again. An erasure is a sore to the eye.

Orthography is next to be considered. Bad spelling is disgraceful, and many people spell badly from simple carelessness. Read carefully the works of the best authors. Write extracts from these works, and you will intuitively spell correctly. Your sense will become offended at a misspelt word. Use the simplest language. Always have a dictionary (pocket) beside you, but never consult it unless you are in doubt. Once consulted, you should remember the word ever afterward. Never divide your words into syllables at the end of the lines unless you cannot help

it. If you have space for the first syllable, let your hyphen be bold Thus:

It is sometimes a great con--

solation to me that, etc., etc.

A word of one syllable must not be divided. Bring it bodily over to the next line.

Compound words must be divided into the simple words composing them. Thus: War-whoop, not warw-hoop; bread-stuff, not breadst-uff.

GRAMMAR.

Place your verbs correctly at all hazards. Never use the adverb for the adjective, or the adjective for the adverb. Never take liberties with the relative pronouns, or mingle in dire confusion tenses and moods. A careful study of the admirable grammar in this cyclopedia will keep the letter writer in the straight path.

PUNCTUATION.

In order to have the meaning of words readily understood, it becomes necessary to divide those words into paragraphs, sentences and clauses, by means of punctuation. As an instance of the absence of punctuation and the farcical result, just read this:

Lost on King Street on Thursday evening last an umbrella by an elderly gentleman with a carved ivory head.

Take the following rules and mark them well:

Put a comma wherever you would make a trifling pause, were you speaking; as, "He came, he saw, he conquered."

A semicolon makes a longer pause, and an incomplete sentence; as, "Julia is handsome; Agnes is beautiful." The semicolon separates the sentence more distinctly than the comma.

The colon marks a sentence which is complete in itself, but is followed by some additional remark; as, "Shun vice: it will lead to ruin." The colon is also used to precede a quotation, and point it off from the rest of the sentence; as, Shakespeare says: "Assume a virtue, if you have it not."

A period is used to denote that a sentence is complete; as, "A bird in the hand is worth two in the bush."

The dash is used to denote a sudden pause, or abrupt change of sense as, "I have loved her madly, wildly—but why speak of her?"

The interrogation point is used only after a question ; as, " Why did you say so ? "

The interjection point is used only to denote an exclamation ; as, " Alas ! all my joys have flown ! "

The parenthesis is used to enclose a portion of a sentence which if left out would not destroy the sense ; as, " I value this flower (a faded flower) very highly."

The apostrophe is used to mark the possessive case, and also the omission of a letter or letters in a word ; as, " Frederick's hair is black," or, " Gen'l Grant is getting old."

The carat is used to mark an omitted word, which word must be written immediately above it ; as,

wet
" What a day ! "
^

The hyphen is used to connect compound words, and at the end of a line shows that more syllables are carried over to the next line.

Quotation marks are used before and after every quotation, to separate and define it ; as, " Many are called, but few are chosen."

CAPITAL LETTERS.

The capital letters only set apart the sentences and paragraphs, but while their proper use adds greatly to the beauty of an epistle, their omission or improper use will make the pages present a perfectly absurd appearance.

Begin every paragraph with a capital letter.

Begin every sentence following a period with a capital letter.

Begin all proper names with a capital letter.

Begin all titles, as Lieut. Governors, Vice-President, General, Doctor, or Captain, with a capital letter.

Begin all names of places, as Montreal, St. Catharines, Niagara, with a capital letter.

Begin the words North, South, East, West, and their compounds and abbreviations, as North-east, S. W., with a capital letter.

Begin the names of Deity and Heaven, or the pronoun used for the former, as, in His mercy—Thou, Father, with a capital letter.

Begin all adjectives formed from the names of places or points of the compass, as English, Northern, with a capital letter.

Begin every line of poetry with a capital letter.

Begin all quotations with a capital letter.

Begin all titles of books, and usually each important word of the title, as, Collins' "Life of Sir John A. Macdonald."

Begin the name of any historical event, as the Civil War, with a capital letter.

The pronoun I and the interjection O must invariably be written with a capital letter.

Begin all the names of the months, as June, April, with a capital letter.

Begin all addresses, as, Dear Sir—Dear Madam, with a capital letter.

Capital letters must never be placed in the middle of a word; never, except in accordance with the foregoing rules, in the middle of a sentence.

STYLE.

You cannot blindly follow any rules as regards style, as your style will ever be your own. Quote as little as possible, and be niggardly with your adjectives. Avoid long sentences, and florid language. Parentheses should be carefully punctuated; as, "John (who is, as you are aware, a confirmed toper) is considerably better."

Be very careful not to repeat the same word. Tautology is a crime in writing. Read this and see how you like it:

"Willie has *come*. Johnny will *come* to-morrow. Will you *come* and spend a day with us? Make Susie *come*. Sumner has *come* at last."

This is tautology. Do not underline unless in very extreme cases.

"You know, darling, how *intensely* I *love* you," is perhaps excusable.

Never abbreviate except in business. Dates should be given in figures, and money, in parentheses, thus ($10,000). Date carefully.

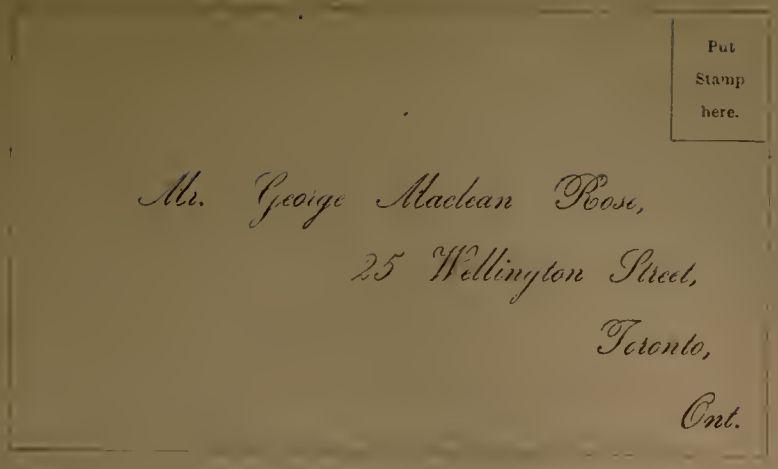
Begin a letter this way:

WINNIPEG, MAN.,
June 1st, 1883.

or,

TORONTO, Sept. 7th, 1883.

Avoid postscripts. They are only embarrassing. Take your envelope, and having neatly folded your letter, place it in the envelope, close the envelope and write in the most legible manner:



REPLIES.

There is no greater mark of good-breeding and politeness, than the prompt reply to a letter. Never lose a moment, if possible, in replying to one. If the reply requires delay, write to acknowledge receipt of the letter. Never reply by proxy if you are able to write yourself.

Never write on a half-sheet of paper.

Avoid pedantry.

Never write a congratulatory letter upon mourning-paper, even if you are in mourning.

Never try to patch an ill-formed letter.

If you add your own address to a letter, put it under your signature, thus:

Very respectfully,
ROBERT R. WHITE,
154 R—— St.,
London, Ont.

Never write an anonymous letter. Treat it with silent contempt.

Never gossip. Friendly intelligence, if you are certain it is true, may be communicated.

Date every letter clearly and carefully. It is often of the utmost importance to know when a letter was written.

Sit erect when writing, as, if you write constantly, a stoop will surely injure your figure and your health.

We give examples of the forms of letters in general use. These will act as guides to the inexperienced.

LETTERS OF INTRODUCTION.

Never seal a letter of introduction. Mention the business in which the party whom you are introducing is or was engaged. Write the name of the party introduced in the left-hand corner of the envelope containing the introduction. Thus; you wish to introduce Mr. Charles G. D. Roberts, of Fredericton, N. B., to Prof. Goldwin Smith, of Toronto. Direct your letter as below:

Prof. Goldwin Smith, D. C. L.,
The Grange,
Toronto.
Introducing
Charles G. D. Roberts, Fredericton, N. B.

If you want to be stylish, send your letter of introduction, with your card, by the servant at the private residence of the person to whom you are introduced. Send a letter with your card if you present it at a merchant's office.

INTRODUCING ONE LADY TO ANOTHER.

Chatham, June 1, 1883.

Dear Emily,

This letter will introduce my dear friend Mrs. Thomas Frost, of whom you have heard me speak so much. I feel assured that this introduction will prove of considerable pleasure to both of you.

Any attention you show her during her stay in Toronto will be appreciated by

Your affectionate friend,
Julia M. Harris.

Mrs. Alexander Mackenzie.

Introducing a Young Lady Seeking Employment.

BRANTFORD, June 1, 1883.

DEAR MR. JONES :—

The young lady whom this letter will make known to you is desirous of obtaining employment in your city, and I use our old acquaintanceship as the bridge to your good offices in her behalf. She has received a very liberal education and would prove of immense value to a family whose young children need careful and judicious teaching. She is gentle, amiable, and willing. I trust you may be able to serve her.

I am, etc.,
Dear Mr. Jones,
Your sincere friend,
R. A. APPLETON.

MR. T. F. JONES.
Toronto.

Introducing a Gentleman seeking a position in a Counting-house.

KINGSTON, June 1, 1883.

MY DEAR SIR :—

Recognising your well-merited and extensive influence in the commercial circles in your city, I beg to introduce to you W. James Farms, who is desirous of obtaining a clerkship in a counting-house. He is a gentleman of capacity and ability. His character stands A 1, and he is as industrious as he is energetic. He considers Montreal a better field than this place, and prefers to try his chances there to remaining here. He can refer to me. Trusting that you will lend him a helping hand, I am,

Yours, very truly,
JACOB HILL.

JOSEPH RIDOUT, Esq.
Montreal.

Introducing a Gentleman to a Lady Friend.

TORONTO, June 1, 1883.

MY DEAR MISS BUNTING :—

My friend Mr. Robert George Brown by whom this letter will be presented, is about to settle in Clifton. As your hospitality is proverbial, may I hope for a little slice of it for him? And I look forward to good reports from both of you as to the ripening of a friendship the seed of which is now sown by

Your very sincere friend,
JOHN G. SAXE.

LETTERS ON BUSINESS.

Letters on business should be brief, to the point, and clearly and cleanly written. No flourishes either in diction or penmanship. There is no time for such ornamentation in business.

Ordering a supply of goods for a store in the Country.

REGINA, N.W.T., June 1, 1883.

MESSRS FULTON, MICHIE & Co., Toronto.

GENTLEMEN,—I have just opened a large grocery store in this place, and the prospects of success seem assured. I should be happy to deal with your firm. I can refer you to Robinson & Charles, of 270 Front Street, Toronto. This being our first transaction, I shall be prepared to pay the Express Co. upon delivery of goods, if you will forward me your ac. with the usual cash discount by a previous mail.

Enclosed please find order, which I should wish filled as promptly as is consistent with your convenience.

Very respectfully,
R. M. MACARTHY.

Letter offering the MS. of a book to a Publisher.

OTTAWA, April 2, 1883.

MESSRS. HUNTER, ROSE & Co.,
Publishers, Toronto.

GENTLEMEN,—I have just written a society novel of the present day, and wish to have it put upon the market as soon as practicable. Please inform me if you are willing to publish it, and at what terms.

This is my first novel, but under the name of "Daisy Davin" I have contributed quite a number of short stories to the late *Canadian Monthly*, and other popular publications. I may mention that my style is what is termed "breezy," that is, bright and crisp.

Awaiting an early reply, I am, gentlemen,

Very truly yours,
(MRS.) J. F. MURRAY.

Reply.

25 Wellington St., }
Toronto, April 4, 1883. }

Mrs. J. F. Murray.

Dear Madam,—Having made all our arrangements for publications for the year, we are compelled to decline the offer of your MS., and trust that you may be successful elsewhere.

We are, dear Madam,
Your obedient servants,
Hunter, Rose & Co.,
Per D. A. R.

Requesting the Settlement of an Account.

Barrie, July 30, 1883.

Mr. T. W. Ingram.

Dear Sir,—As we have a large payment to make at the end of next week, and as your account remains unsettled, we must beg of you to send us a check for same by Tuesday next. We are reluctant to press you, but we are pressed ourselves.

Very respectfully,
Smith & Brown.

Requesting Payment of Rent.

27 Toronto St., Toronto. }
March 27, 1883. }

Mr. Patrick K. Chiselhurst.

Dear Sir,—I must call your attention to the fact that, although your agreement for the house rented by you from me stipulates monthly payments in advance, you have failed to pay for three months and are now in arrears $106.

If you fail to pay the account within six days I shall be reluctantly compelled to place the matter in the hands of my lawyer for collection.

Very respectfully,
Thomas Fraser.

From a Lady in the Country ordering Goods.

Maida Vale, Ingersoll, }
Jan. 18, 1882. }

Messrs. Robert Walker & Co.,
King St. E., Toronto.

Gentlemen,—Please send me by Express the following goods :

12 yards of green gauze.
24 yards of gingham.
2 pair of six-button gloves, lavender colour, size 6½, Dent's make.
6 pocket handkerchiefs, plain white, with broad hem-stitched border.

Also please send pattern of black satin of a good quality, price marked.

The goods must be sent to Ingersoll by rail, and to Mr. William Gibson, who will pay C. O. D.

Direct as follows :

Mrs. Wilson Toft,
Maida Vale,
Ingersoll.

To the Father of a Young Lady, asking her hand in Marriage.

Dufferin Avenue, Ottawa, }
Mar. 12, '83. }

Sir,—I venture to hope that you will call all your friendly feelings to my assistance, in considering a proposal I am about to lay before you, in which my happiness is completely concerned.

For a long time past your daughter, Effie, has held a strong hold over my affections, and I have reason to believe that I am not indifferent to her. My position is such as to warrant my belief that I could support her in the style of comfort which she so well deserves, and which it has been your constant aim to provide for your children. As regards my character and disposition, I trust they are sufficiently well known to you to give you confidence in the prospect of your child's happiness.

I have not, however, ventured on any express declaration of my feelings, without first consulting you on the subject, as I feel persuaded that the straightforward course is always the best, and that a parent's sanction will never be wanting when the circumstances of the case justify its being accorded.

Anxiously awaiting the result of your consideration on this important and interesting subject,

I remain, sir,
Your most faithful and obedient servant,
Edward L. Spring.

To
W. Parsons, Esq.

Favourable.

Meadow Bank, March 13, 1883.

My dear Edward Spring :

I thank you very much for the manly

and honourable way in which you have addressed me in reference to my daughter's hand. I have long since perceived that your attentions to her were of a marked character, and that they appeared to give her much pleasure. I know no reason whatever to oppose your wishes, and, if I may judge from the manner in which she received the communication from myself, *you* will find a by no means unwilling listener.

Dine with us to-morrow at six o'clock, if you are not engaged, and you will then have an opportunity of pleading your own cause. Meanwhile, believe me, with every confidence in your integrity and good feeling,

Yours most sincerely,
WILLIAM PARSONS.

To
E. L. SPRING, Esq.

Unfavourable.

MEADOW BANK, March 13, 1883.

DEAR SIR :

It is always painful to return an unfavourable answer, but such is unfortunately my task on the present occasion.

My daughter has for a long time been engaged to a gentleman whose character and position give her no cause to regret the engagement. At the same time she duly appreciates the compliment implied by your preference, and unites with me in the sincere wish that, as an esteemed friend, you may meet with a companion in every way calculated to ensure your happiness.

Believe me, dear sir,
Your sincere friend,
WILLIAM PARSONS.

To
E. L. SPRING, Esq.

To a Widow from a Widower.

ST. CATHARINE ST., MONTREAL,
Nov. 19, 1883.

MY DEAR MADAM :

I am emboldened to lay open to you the present state of my feelings, being so convinced of your good sense and amiable disposition, that I feel assured you will deal candidly with me in your reply.

Like yourself, I have been deprived of the partner of my early life, and as I approach the middle state of existence, I feel more and more the want of some kindred spirit to share with me whatever years are reserved to me by Providence. My fortune is such as to enable me to support a lady in the manner which I feel to be due to your accomplishments and position, and I sincerely hope that you will think carefully over my proposal ; and, if you can make up your mind to share my fortune and affections, I trust that no efforts will be wanting on my part to ensure you the happiness you so well deserve.

I need scarcely say that an early answer, on a matter so much connected with my future happiness, will be a great favour to,

My dear madam,
Your devoted friend and admirer,
ARTHUR BOSWELL.

To
MRS. VANKOUGHNET.

A Young Man in Prince Arthur's Landing to his Betrothed in Toronto.

PRINCE ARTHUR'S LANDING,
Dec. 13, 18—.

DEAREST ELIZABETH :

You have doubtless received letters from me lately, describing my situation here, and stating the projects that I had under consideration. In one of those letters, allusion is made to a speculation in land in the neighbourhood of this place, with the remark that, if it were successful, I should be able to make good my promise, and claim you as the partner of my joys and sorrows for life. My most sanguine expectations have been more than realized.

Herewith you will receive a draft on the Ontario Bank, in your city, for $500, of which I pray you to make use in providing such articles as may be necessary to replenish your wardrobe, in anticipation of our speedy marriage, after my return home. Pray present your dear mother with my affectionate regards, and say that I can never forget, now that I have the power, that it is my duty to assist and cherish her declining years. I also send some few trinkets, made of Leadville gold, which you will please present on my behalf to your sisters, as tokens of my brotherly regard ; for such I now consider my relations toward them.

With my kindest respects to all, and

trusting that I may soon be permitted to embrace my dearest, I remain

Her devoted
MARK TAPLEY.

On a Birthday.

LONDON, June 1, 1883.

MY DEAREST FANNIE :

How sad it is that I am hindered from being with you on this dearest of all days of the year.

Accept, dearest, the enclosed portrait. I feel that its original is too deeply stamped on your heart to require any effigy to remind you of him. It is, however, the most appropriate present I could offer to the cause of my happiness on this brightest of all days.

God grant that every succeeding year you may increase in all that is charming in body and mind, and believe me,

My dearest Fannie,
Your own
JOHN.

A Complaint.

July 10, 1883.

DEAR MAUDIE :

It is with pain I write to you in aught that can seem like a strain of reproach, but I confess that your conduct last night both surprised and vexed me. You received Mr. Watson's attentions in so marked a way that I feel it due to yourself to comment on your conduct. Believe me, I am in no way given to idle jealousy ; still less am I selfish or unmanly enough to wish to deprive any girl on whom I have so firmly fixed my affections of any pleasure to be obtained in good society. But my peace of mind would be lost for ever, did I believe that I had lost one atom of your affections.

Pray write and assure me that you still preserve your undivided affection for

Your devoted but grieved
FRED.

Seeking a Clerkship.

TORONTO, May 4, 1883.

GENTLEMEN :—

Perceiving by your advertisement in the *Globe* that you are in want of a clerk, I beg to inclose testimonials, and venture to hope that from previous experience in the line of business you pursue I should be of some use in your establishment. My habits of life are such as to assure regularity in the discharge of my duties, and I can only assure you that, should you honour me with your confidence, I shall spare no pains to acquit myself to your satisfaction.

I remain, gentlemen,
Your obedient servant,
HARRY SANDERSON.

To MESSRS. GRIFFITHS & Co.

Application for Subscription to a Charity.

October 8, 1883.

SIR [or MADAM] :—I take the liberty of inclosing a prospectus of an institution which is likely to have some beneficial effect upon the poor in our neighbourhood. [*Here state particulars.*] From your well-know liberality, I trust you will excuse this appeal from a stranger in furtherance of an act of benevolence, and remain,

Sir [or Madam],
Your most obedient servant,
JULIA [or JOHN] SMITH.

Declining.

COLLEGE AVENUE, TORONTO,
29th October, 1883.

Mr. Thomas Jones regrets exceedingly that the numerous applications for kindred purposes near home render it impossible for him to comply with the request contained in Mr. [or Mrs.] ——'s letter of the 18th October.

A Friend in the Country Asking a City Friend About Board.

CORNWALL, August 14, 1883.

DEAR WILLIAM—In a few days I will have occasion to visit Montreal, and, being a comparative stranger, I wish to be as near the business centre as possible, though located in a private boarding-house, as I have a strong aversion to hotel life. My object in writing is to ask you to recommend me to some private boarding-house, and to engage rooms in advance of my arrival, so that I may proceed thither at once on landing from the cars. Leaving the selection entirely to yourself,

and hoping to hear from you soon, I remain

Yours faithfully,
ISAAC JENKINS.

Application for a Loan.

STRATFORD, July 27, '83.

DEAR SIR—I am temporarily embarrassed through the failure of my Toronto correspondent to remit. The sum of $2,000 would relieve my present necessities, but I dislike borrowing money of professional lenders, and would rather solicit the aid of some one of my numerous friends. My first thought was of yourself; and, therefore, my object in writing is to ask if you can spare me the required sum without in any way interfering with your business arrangements? You may rely upon it returned to you on the 15th prox., and perhaps before that time. Pray reply at your earliest convenience, and oblige

Your obedient servant,
GEORGE WHITE.

To PHILIP BROWN, Esq.

Reply in the Affirmative.

YONGE ST., TORONTO,
July 30, '83.

DEAR SIR—Your letter of yesterday was duly received, and it gratifies me to be able to say that you can have the loan asked for. Inclosed you will find a check for the amount, which you will return at the date named and oblige,

Yours, very sincerely,
P. BROWN.

To GEO. WHITE, Esq.

Declining to Lend Money.

QUEBEC, April 5th, 1883.

MY DEAR SIR—I have always made it a principle in life never to borrow or lend money, not even when members of my own family have been concerned. As Shakespeare says:

"Neither a borrower nor a lender be,
For loan oft loses both itself and friend."

I therefore trust you will excuse conduct which may seem harsh and uncourteous on my part, but which I have ever found to be the safest, and, in the long run, the kindest course for all parties.

I remain, my dear sir,
Yours very faithfully,
JOSEPH JOHNSON.

To HOWARD WELLS, Esq.

Soliciting Renewal of a Promissory Note.

PARIS, ONT., May 7, '83.

GENTLEMEN—You have in your possession my note for $1,000, payable May 14, which I am sorry to say I cannot meet at maturity, owing to a combination of circumstances adverse to my interests, and not anticipated. If you will do me the favour to renew it for ninety days, with interest added, I do not doubt my ability to redeem it when due. A compliance with this request will confer an obligation upon, and oblige,

Your obedient servant,
THOMAS MORAN.

To MESSRS. SADLIER & Co.,
30 William St., N.Y.

Offering a Loan of Money for Business Purposes.

BELLEVILLE, Dec. 15, '83.

DEAR ROBERT—Kowing that you are desirous of starting in business for yourself, I write to say that it is in my power to offer you a loan of two thousand dollars ($2,000) without interfering in any way with my own business expenditures. I trust that you will let me have a friend's privilege, and accept the money on such terms as will best suit you.

With best wishes for your success.

I am your friend,
AUSTIN KEMP.

ROBERT ROWE, ESQ.

Letters of condolence, though a necessity between friends, are very difficult to compose, since the more earnestly and touchingly they are written, the more deeply will they probe the wounds still bleeding under the stab of affliction. The shorter such letters are, the better. Let them be short and sincere, and always wind up with a hope that Providence will assuage the grief with which it has pleased Him in his far-seeing wisdom to afflict your friend.

REPLIES TO ADVERTISEMENTS.

In replying to advertisements never omit to mention the name of the paper in which the advertisement appeared, also its date, and a brief allusion to the matter in the advertisement.

Be as concise as possible, covering the ground in a few well-chosen sentences.

Book-Keeper.

128 Isabella St., Toronto,
October 20, 1883.

To Messrs. Frank Smith & Co. :

Gentlemen—In reply to your advertisement in this day's *Telegram* for a competent book-keeper, I respectfully beg to offer myself as candidate for that position. I have been in the employment of Mr. Thomas Thompson, in this city, the large dry-goods store—in the capacity of book-keeper for the last three years, and am about to leave on the 1st *proximo*, as Mr. Thompson is about to retire from business.

Mr. Thompson has authorized me to refer to him in reference to character and ability. I can also refer to Messrs. Rose & Thorn, Equity Chambers, with whom I clerked for a year and a half.

Hoping to be fortunate enough to suit your requirements,

I am, gentlemen,
Respectfully,
Joseph Robinson.

General Employment.

Prescott, 11th Sept., '83.

Sir—I hasten to reply to your advertisement in the Montreal *Star* of to-day. I am most desirous of obtaining employment, and would not consider present emolument so much an object as the prospect of a permanent and respectable situation.

I am a young man (age 21), and single. I have received a good commercial education, and am versed in book-keeping and accounts generally. In other respects I am willing to render myself generally useful, and, although I have not hitherto filled a situation, I doubt not but that in a short time I shall be able to fulfil any duties assigned to me.

In the event of your doing me the honour to select me for the proferred employment, I could furnish you with satisfactory testimonials as to character, and could, if necessary, provide guarantees for fidelity.

Trusting that I may have the honour of hearing from you in reply,

I remain, sir,
Your obedient servant,
Joseph L'Estrange.

To
W. Henry Morgan,
20 St. James St.

From a Young Man to a Friend Soliciting a Situation.

St. John, N. B.,
March 28, 1883.

Dear Edward :

When you left Halifax, you were kind enough to promise that should it be in your power to forward my interest in any manner you would feel a pleasure in so doing. I am now in want of a position, my former employer having sold his business, and his successor having, as he informs me, a sufficient number of hands for all the work he is likely to have. If, therefore, you should hear of any situation or employment which you consider likely to suit me, either in my own businesss, that of a clerk, or in any other in which I can make myself useful, your recommendation would greatly oblige, and be of material service to,

Dear Edward,
Yours very truly,
John James.

Asking Permission to Refer to a Person.

Newcastle, July 7, '83.

Dear Sir :

As I have had the honour of being known to you for some years, during which period I trust my conduct has impressed you favourably, I take the liberty of soliciting at your hand the following favour :

Messrs. Sibthorp, of Beaver Street, New York, are in want of a correspondent at London, and as I am about to proceed there on some affairs of my own, and shall probably take up my residence in that capital for some years, I am anxious to secure a post which appears to me in every

way eligible, and accords with my views exactly.

As a matter of course, Messrs. Sibthorp desire testimonials as to my capacity and integrity, and as you are in a position to speak positively on these points, I have written to ask you whether I may so far trespass on your kindness as to mention your name by way of reference.

Should you kindly grant this request, I need scarcely assure you that my endeavour will be to prove both to Messrs. Sibthorp and yourself that you have not been mistaken in your opinion of me, while I shall ever feel grateful for this further instance of the interest evinced by you in the welfare of

Your truly obliged,
WALTER MOTT.

To
Mr. GEORGE LEWIS, M.P.
Ottawa.

Clerk.

29 GROVE ST., QUEBEC.
November 16, 1883.

MR. ISAAC WATERS.

SIR,—I see by this day's *Chronicle* that you are in want of a competent clerk, and I respectfully beg to apply for the position. Owing to the financial difficulties of my late employers, Messrs. Kendrick & Worts, with whom I was clerk for eight years, I am out of employment. I can refer to either of these gentlemen for a testimonial as to my industry, good conduct and ability. I may add that I am a total abstainer.

Hoping to receive a favourable reply,
I am,
Respectfully,
JOHN COLLINS.

Cook.

100 WEST 28th ST., NEW YORK,
March 18, 1883.

MRS. WILLIAM HOWARD.

RESPECTED MADAM,—Having seen your advertisement for a plain Cook in this day's *World*, I respectfully apply for the place.

I can cook plain joints and do all manner of plain cooking, as my present employer, Mrs. James Boswell, is willing to testify. As Mrs. Boswell is going to Europe on the 1st of April, I will be out of place on that day. A line to Mrs. Boswell will satisfy all inquiries in regard to my character and capacity.

Respectfully,
JANE MATTHEWS.

Governess.

BEVERLEY ST., TORONTO,
July 27, '83.

MRS. E. F. JARVIS.

MADAM,—In reply to your advertisement in to-day's *Mail* for a Governess to teach three little girls French, German and English, I hasten to inform you that I am graduate of Pickering College; that I have resided one year in Paris and five months in Vienna, sojourning in both capitals for the purpose of completing my knowledge of French and German.

I have been Governess in the family of Mr. George F. Witmore, but owing to the death of my dear little pupil, their only daughter, Ada, I have been thrown out of employment. In addition to my College and Academy testimonials, I beg to refer to Mrs. Witmore, Holly Park, Montreal, and to the Rev. Mr. Brooks, St. Matthew's Church.

Hoping to be favoured by your selection,

I am, madam,
Yours respectfully,
MIRIAM J. PACKARD.

A few Lines Accompanying a Gift.

A WEDDING GIFT.

200 BLOOR ST., YORKVILLE,
June 18, 1883.

Nelly Shuter sends her best love, and best wishes, to Susie Lorimer, and a little bracelet as a souvenir of an event that Nelly trusts will ever prove as happy and auspicious as she wishes it to be.

Christening Gift.

HEATH HOUSE,
June 18, '83.

God-papa sends little Mamie a coral, to enable her to cut her teeth, but not the acquaintance of

JOSEPH CHAMBERS.

Flowers.

15 Spadina Avenue,
19 July.

Roses become Miss Irwin so much, that Mr. Barnett earnestly hopes to see the accompanying bunch in Miss Irwin's corsage this evening at the Grand Opera House.

Music.

13 Chestnut St., Hamilton,
28th November, '83.

Mr. John Strachan presents his compliments to Miss Delamore and begs to send her a few selections from the operas, her singing last night at Mr. Hamlyn's having reminded him of the most celebrated *prima donnas*.

VARIOUS FORMS OF INVITATIONS.

NOTE OF INVITATION.

Mr. W. H. Hamilton presents his respects to Miss Minnie Moore and begs that he may be allowed to accompany her to-morrow evening to the Horticultural Gardens.

Surrey Place, Nov. 26th.

NOTE IN REPLY

Miss Minnie Moore presents her compliments to Mr. Hamilton and regrets that a previous engagement prevents the acceptance of his kind invitation for this evening.

248 Jarvis Street, Nov. 27th.

NOTE OF INTRODUCTION

Elora, June 12th, 1883.

Dear Sir,

Allow me to introduce to you my friend, Mr. William H. Compton, who visits Toronto for educational purposes in connection with his position as Inspector of Public Schools in this County.

Any favour you may show him will be highly appreciated by him as well as by

Yours very truly,

Samuel G. Williams.

Prof. Wilson, LL.D.,

University College, Toronto.

Mr. and Mrs. Henry A. Bogert

At Home

Saturday, November 5th, from

3 to 6 o'clock, p. m.

Wednesdays,
Nov. 16th and 30th,
Dec. 14th and 28th.
} *from 8 to 11 P.M.*

Napanee.

POLITICAL.

Mr. Charles Pratt

requests the pleasure of your company

at No. 232 Sherbourne Street,

on Thursday Evening, March 16th, at

9.30 o'clock, to meet

Hon. Oliver Mowat

immediately after his address at the Opera House.

Mr. and Mrs. James Allan

request the pleasure of your company at "The Castle," Montreal, on Thursday, November 15th, 1883, at 9 p.m., to celebrate the 25th Anniversary of their marriage and his 50th Birthday. Also to meet Mr. and Mrs. James Allan, Jr.

In Memoriam.

Arthur G. Charlton,

Died June 15th, 1883.

AT SPRINGFIELD, ILL.,

Aged 15 Years and 5 Months.

Brampton, June 26th, 1883.

Mr. & Mrs. _____

request the honour of your presence

on

Tuesday Evening, November fifteenth,

from Eight until Eleven o'clock,

to meet the

Rev. Principal Grant, D.D.,

of

Queen's University.

Rosedale.

R.S.V.P.

1863. 1883.

China Wedding.

Mr. & Mrs. Mercer Adam

At Home

Thursday evening, June 4th, 1883,

at half-past eight o'clock.

Oakleigh Cottage.

The Dancing Class

request the pleasure of your company

Wednesday evening, 18

at Eight o'clock, at the residence of

M . . . . . .

Compliments of . . . . . .

R.S.V.P.

Your presence is requested at the marriage ceremony of

Miss Anna Ward Crawford

and

Mr. George De Witt Thornton,

Wednesday afternoon,

October twelfth, at half-past three o'clock,

St. Paul's Church, Yorkville.

1883.

18 Grange Road.

Speeches.

A SPEECH should be *short* and to the *point*. Remember that brevity is the soul of—a speech. A long speech, unless the speaker be exceptionally eloquent, or the occasion exceptionally mandatory, is one of the greatest of possible inflictions. Some men love to hear themselves talk, and, quite oblivious of the feelings of their listeners, continue to drone out laboured sentences and weary platitudes until politely coughed or buzzed down. These men ought to be indicted as nuisances.

The specimen speeches which we present in this Cyclopædia are merely meant to act as guides. They show the form of speech most popular, and give the length that is likely to be received with approval. Of course there are occasions when a long speech is absolutely necessary. The toasts and sentiments embrace all subjects, and are suited to occasions of a festive character.

A Public Officer, on retiring, is Presented with a Souvenir.

Sir,—Your friends—and their name is legion—cannot permit you to retire into private life without a direct expression of their esteem and regard. I am desired on their part to present you with the accompanying ..... as a very slight token indeed of their appreciation of so admirable an officer, so good a citizen, and so perfect a gentleman.

Reply.

Sir,—To have won your approval, and that of the friends you so kindly represent, is indeed sweeter to me than anything else that life, with all its prizes, could offer. I am bold enough to say that I have endeavoured to win the good-will of my fellow-citizens of all grades and classes, but I am modest enough to assure you this gracious, superb, and totally unexpected offering so completely affects me, as to leave me poor in speech, but rich in thankfulness and gratitude. My children and children's children shall treasure this souvenir, as the prize won in the big fight by at least the honest efforts of their sire.

The Ladies.

Where is the man who, upon one occasion or another, has not been called upon to respond to the toast of "The Ladies?" The following will enable the bashful youth to train his ideas in regard to the subject, and to prepare him with a reply when the mine shall have been sprung upon him. A ready response to this most popular of all

toasts is as necessary as it is graceful and manly; so let there be no hemming or hawing, no hesitations, stutterings or stammerings, but start to your feet at once and dash into the subject as though you were enchanted at the privilege :

Mr. Chairman and Gentlemen—

The high, the glorious privilege has been accorded me of replying to the toast of "The Ladies." You could not have selected a better man. Impossible! This you will say is rather cheeky of me ; but when I tell you that there breathes not a man who reveres, loves, and adores the sex so much as I do, I ask you in all honesty, could the chance of replying to the toast have fallen upon more deserving shoulders ? The ladies, God bless them ! what would we do without them—that nearer, clearer, dearer heaven of stars ! In their smiles lie our sunshine, in their tears our anguish, in their beauty our heartaches. To the ladies we owe all the refining influences of our lives. They are the bright flowers by the wayside, the quite too tenderly utter beings, who make, mar, and marry us.

Then here, gentlemen, is my response to the toast of The Ladies. May they ever shine like stars in our firmament, never cease to captivate us, and, when we desire it, of rewarding us. The ladies, God bless them !

Another Reply.

The toast to which I have the honour of responding is one that awakes in the manly heart the latent chivalry of manhood. The toast of The Ladies embraces womanhood, the mother, the wife, the daughter, the sister, and if you will, gentlemen, the cousins and the aunts. Sir Walter Scott has beautifully written :

> "O woman ! in our hours of ease,
> Uncertain, coy, and hard to please,
> And variable as the shade
> By the light quivering aspen made ;
> When pain and anguish rack the brow,
> A ministering angel thou !"

What an admirable delineation of woman's character ! In our hours of ease, on the stoop, or by the stove, there is no doubt of it, gentlemen, that she *is* uncertain, extremely coy, and infernally hard to please—I mean at times—while as for her variability, she is as whirly-giggy as a weather-cock on a windy March morning. But here is the other side of the shield, the silver one. Have any of you ever been ill ? Have any of you ever been smitten to the earth by grief or misfortune ? I hope not ; but if such has been your bitter experience, turn back on your memories for the tender sympathy, the unfailing devotion, the ceaseless graciousness of woman. Gentlemen, this is a theme upon which, like the brook, I could "run on for ever ;" yet, delightful as it is, time flies, and perhaps the time that I am spending in reply to the toast of The Ladies, could be far better spent in their company. Gentlemen, I return you my most heartfelt thanks for being called upon by you to reply to such an important and gracious toast.

Presentation of a Piece of Plate to a Public Official.

Sir,—It affords me intense pleasure to represent a committee, who in turn represent your numerous friends and admirers, and on their behalf to present you with this ..... as a very slight token of their appreciation of the admirable and praiseworthy

manner in which you have discharged the onerous and responsible duties appertaining to your position. Your high character, integrity, and zeal have notonly won the esteem and confidence of your friends, and of those brought into immediate contact with you, but have radiated far and wide, so that you have reached the position—one that is not only a credit to yourself but to the country at large.

That you may long continue in the service which you so admirably adorn is the wish of the many to whom your virtues are as household words. With this souvenir let me, on the part of those whom I represent, wish you health, happiness and prosperity.

Reply.

MR. —— AND GENTLEMEN :

I need hardly say with what gratitude I accept this splendid gift—a gift which is dearer to me than all the "gold of Ind," since it comes from a set of friends whose endorsement on a bad bill no amount of treasure could purchase.

Gentlemen, my aim in life has been to do what is right, to labour with earnestness, to win on the merits. My efforts have been crowned with success, and in this superb souvenir, I recognise my crown of victory.

Gentlemen, your too flattering recognition will but serve as a greater impetus to exertion, and, rest assured that no effort on my part shall be wanting to repay in the fullest measure of my capacity the compliment it has pleased you this day to bestow upon me.

Presentation to a Teacher by the Young Lady Pupils.

DEAR TEACHER :

It devolves upon me to offer you, in the name of the young ladies of this school, a slight token of our esteem and regard. To myself it is a source of immense pleasure to be made their mouthpiece on this occasion, since my sincere delight may make some amends for my many shortcomings. I am not now addressing you as our teacher, but as our friend, our dear, trusted, and very much tried friend ; for how often have we not tried your temper and your forbearance ! Dear Teacher, we will ever keep your image enshrined in our hearts, and shall look back to the school, not as an abode of penance, but rather of pleasure, since your kindness and your amiability have so rendered it—our studies having been illuminated by your patient graciousness. The little gift we offer you is of no intrinsic value, but it is rich in love, and gratitude, and respect. Please accept it, and with it our united hopes that your life will ever be as happy as you have made ours.

Reply.

MY DEAR PUPILS :

I find that my heart is so anxious to speak that it has almost paralyzed my lips. Yes, it is indeed my heart that returns thanks to yours, for I know how pure, gentle, generous, strong, and true your hearts are, and my heart says to yours, "Oh, how deeply grateful I am for this tender mark of your affection !" My dear pupils, if you have been a little inclined to—what shall I call it ? not idleness—no, no—well, a word from me ever brought you back from the plucking of the flowers of fancy, and a rebuke was but a reminder that you should tread the path of study for yet a little while. My life has been rendered doubly pleasant in the sunshine of your youth, and that I shall hold a place in your esteem and affection is indeed a delightful reward. That I thank you for your gift it is needless to say, Ah ! would that one spark of eloquence of some of the masters over whom we have studied together were given to me now, to let you

know what I feel on this occasion, which shall ever be remembered as one of the brightest resting places in my journey through life.

A Bachelor.

LADIES AND GENTLEMEN:

It seems rather hard that I, an unfortunate bachelor, should be singled out to reply to this toast. Surely the misfortune of being unable to meet a fair one to share my lot ought to have won your sympathy, and to have left me unnoticed, save by what the poets are pleased to term the "passing tribute of a sigh."

Ladies, it is no fault of mine that I am unmated. I detest, abhor, loathe bachelorhood—would that I could find stronger terms of detestation—and if Fate, Kismet, Destiny, call it what you will, were to place some charming blushing maiden, such as I see around this board to-night, in my path, I would consider myself the most blessed of human mortals. What more contemptible being than the old bachelor! who so lonely, who so uncared for, who so infamously selfish! Of course, ladies, I allude to those cravens who have feared to risk their fate on that sweet small word, "Yes." I must myself confess to a certain cowardice, and, with Sir Walter Raleigh, exclaim, "Fain would I climb but that I fear to fall." Oh, if some fair lady would but say, "If thy heart fail thee do not climb at all!" That I live in hope, white blossomed Hope, I do not deny, and whatever be my fate now, in the presence of such charming and beautiful witnesses, I denounce bachelorhood and despise the bachelor.

The Host.

GENTLEMEN:

Fill your glasses till the beaded bubbles at the brim topple over. This is a toast that to honour is a sacred duty. I give you the health of our host—God bless him!

Reply.

GENTLEMEN:

I thank you most heartily for the manner in which you have drank the toast of my health. I assure you from my heart that I never feel so happy as when I see myself surrounded by my friends, and to behold one's friends enjoying themselves is a sight fit for the gods.

In the battle of life, which we are all compelled to fight, it becomes necessary to halt occasionally, stop by the wayside, and refresh. This brief snatching of pleasure at its best, makes us all feel that there is something worth living for, and that life without friends would indeed be but a dismal blank. I again thank you for your gracious good fellowship, and promise you that no effort shall be wanting on my part to enable you to propose the same toast, under the same circumstances, again, again, and yet again.

A Distinguished Guest.

GENTLEMEN:

A duty, and a most pleasant one, devolves upon me of proposing the health of a very distinguished gentleman, who has honoured us with his presence this evening. Mr.—— has done us the very great favour of joining our circle, and we feel the most intense pleasure in doing honour to a citizen who has so justly elevated himself in the opinions and good wishes of his fellow-countrymen. Were Mr.—— absent I could talk about him for "a long hour by Shrewsbury clock," but as he is present I will endeavour to spare his blushes, and come at once to the drinking of his health in a bumper. Gentlemen, long life, prosperity and happiness to our distinguished guest, Mr. ——. Three times three and a tiger? Take the time from me! Hip, etc.

Reply.

MR. CHAIRMAN AND GENTLEMEN:

Our worthy host intimated that he wished to spare my blushes. Now it is so long since I blushed, that I forget the sensation, but I declare that I could find this no occasion to blush, save for very pleasure, since to be thus introduced, and thus toasted is indeed an occasion so pleasurable to me, that it shall ever remain impressed on the tablets of both my memory and my heart.

It is indeed a source of intense gratification to me to find that my little efforts, so far as they have gone, are appreciated, and by gentlemen such as I see around this board. True it is that I have done but little ; but, gentlemen, I assure you my object is to do a great deal, and failing in that, I have but done my share. If, however, I am to do my share in this evening's bout, I am extremely gratetul to our respected chairman, for giving me an opportunity of speaking so *early* in the evening, as later on—well, least said soonest mended.

Wedding-day Anniversary.

This is indeed an occasion where a speech is utterly unnecessary, for the fact of our being here speaks so eloquently, that the words even of a Demosthenes or a Cicero would fall flat, stale, and unprofitable.

Ladies and gentlemen, just cast a glance at that happy man, our host, and that beautiful lady, our hostess. See the "heavenly assenting smile" that speaks of the tenderest devotion, of a happiness those who wed whom they love, alone can know. The sunshine of unalloyed felicity is a nimbus to their lives, and it is well that, as the clock strikes another year upon their wedded bliss, we should be here to congratulate and say, God bless them both.

That their journey of life will be always as smooth as it is now, and that they may ever be protected from storm and strait, is the sentiment I would couple with the health of our dear friends, Mr. and Mrs. ——, on this the anniversary of their wedding.

Reply.

MY VERY DEAR FRIENDS :

As a rule, no husband is perfectly safe in replying for his wife, since that much-to-be respected party is usually so capable of replying for herself, and as on too frequent occasions, her sentiments differ a little from his. On this occasion, however, I reply for my dear wife, knowing that every word I say will be endorsed by her, and that every beat of her heart is in accord with mine.

This is indeed a very joyous anniversary. It recalls the delicious rapture of the moment when I first could call my cherished partner by that sacred and endearing term of wife. It recalls the moment when she placed her happiness in my hands ; and, my dear friends, I ask of you if that smile which puckers round her mouth now, does not do *me* infinite justice ? If I have not been disappointed in her, I trust in God she has not been disappointed in me, and as years pass around, and, Darby and Joan like, we descend the hill, may this anniversary ever prove a resting-place for happy retrospection.

Crystal Wedding.

In this age of transparency, when glass has arrived at such perfection, it behooves us upon this, the anniversary of the crystal wedding of our dear friends, to "hold the mirror up to nature," and let them view themselves in the glass we now place before

them. The lady smiles, as well she may, for Time's glass has not shaken out a single sand, and the fifteen years that have passed since she made our host the happiest of men, have left scarce a trace upon her pellucid brow.

The crystals which we present our dear friends upon this auspicious and delightful occasion, are but a type of the transparency and brightness of their lives. May they never look on life "as through a glass darkly." May the goblets which stand upon the festive board ever brim with the nectar distilled from love and harmony, and may these glass pitchers, and bowls, and decanters serve as crucibles through which their silver and golden anniversaries may yet be passed, and in this joyous and sympathetic company.

Reply.

DEAR FRIENDS:

True it is that we have been married fifteen long years, yet it seems to me that —— is just as young, just as fresh, just as lovely as when, on this day fifteen years ago, I took her for better or for worse. Yet, dear friends, I like this celebration. It reminds us that we have reached one of the great resting-places on the line, and that, whilst we look back with intense pleasure upon our journey, we also anticipate a great deal more farther on the road. It is indeed a source of intense gratification to us to find that, after fifteen years, so many friends came to visit us as we rest by the wayside, bringing gifts and bidding us to be of good cheer. These anniversaries are a sacred institution, and as you were good enough to express a hope that these beautiful goblets might prove crucibles, let me now engage each and every one of you, not only to our silver and gold, but to our diamond weddings. I now drink your healths, thanking you for my fifteen-year partner from the bottom of my heart.

Silver Wedding.

LADIES AND GENTLEMEN:

On a certain day, just twenty-five years ago, a certain lady and gentleman entered for the race of life, and they have, I am delighted to declare, won the plate. Behold it! [Points to gifts.] They have, to continue the parlance of the turf, run neck and neck, and come in to this the winning-post in the easiest of possible canters. Ladies and gentlemen, let us drink to the winners, and let us earnestly hope that they may be matched for the gold plate, and that we may be present when the "little event" comes off.

Ladies and gentlemen, need we say how deeply we congratulate our dear friends? Is not this occasion a lesson to maids and bachelors? Never were there words more applicable, "Go and do likewise." I shall conclude, for I see that you are all eager to do honour to my toast, by quoting Sheridan:

> "Ah, sure a pair were never seen
> So justly formed to meet by nature."

Their healths—God bless them!

Golden Wedding.

This is indeed a grand occasion, and one which, while it brings joy and thankfulness to our hearts, bears with it one of the most beautiful and touching lessons in the book of life.

Our respected and venerable friends have indeed reached the golden age of maturity. Hand in hand have they ascended the hill, hand in hand are they descending into the

valley, a valley lighted with the undying and unshifting lamp of faithfulness, love and devotion. What a privilege for us to be here to witness this beautiful sight, to see the bride and bridegroom of to-day in soul, in heart, the bride and bridegroom of this day half a century ago!

Time has sown fresh flowers in their dear old hearts; time has garlanded their brows with choicest flowers; time has but mellowed their affections which, like good wine, have but improved with age.

We have come here to felicitate them upon the fiftieth anniversary of their marriage, to wish them many a long year yet before they snap the golden link that bound them together; that their bark may sail upon a golden sea, and that their sunset may be golden, in our united sentiment.

Congratulating a Candidate.

Sir,—It it not in mortals to command success, but, what is better, they should endeavour to deserve it. You have been successful because you have deserved it, and we come to *exchange* congratulations, since whilst we rejoice for you, you undoubtedly rejoice with us. We have won a proud victory, but much of the glory is due to our standard-bearer. That you will conscientiously and worthily fill the office which has been bestowed upon you is beyond the region of doubt.

We have done honour to ourselves by proposing so clear-headed and able a candidate, and you, sir, will do honour to us by pursuing in your new position that pure and unsullied line of conduct which has this day led us to nominate you for election.

We do not attempt to exult over the defeated candidate. We can afford to be magnanimous, and since we are now so worthily represented, we feel assured that the enemy will regard you as the exponent of their opinions, as much as we shall. Sir, we cordially congratulate you on a well merited success, and we congratulate you, and congratulate the good cause.

Reply.

Gentlemen:

Deeds, not words, is my motto. That I thank you, and the energetic workers in the good cause which has led to this triumph, a triumph in which I am personally interested, need scarcely be said. I am as yet an untried man, but it is my purpose to prove to you that your votes of to-day have not been thrown away, and that you have honoured an individual, who will at least endeavour to prove his gratitude by head, heart, and unflagging work. The good cause has indeed triumphed, and I pledge myself that the trust you have this day reposed in me shall lose nothing from being placed in my hands. I shall endeavour to the best of my poor ability to walk in the straight path, and to discharge the duties appertaining to my office without fear or favour. Once more I thank you for the high honour you have done me.

The Rules of Debate and How to Conduct One.

ORGANIZING ASSOCIATIONS.

WHEN it is advisable to form a society, club, or other association for any specific purpose, those who agree in regard to its formation may meet upon private notice or public call. The mode of organizing the meeting is similar to that of any other.

As soon as the meeting has been organized, and the chairman announces that it is ready to proceed to business, some one of the originators, previously agreed upon, should rise, and advocate the formation of the club or society required for the purpose set forth in the call, and end by moving the appointment of a committee to draft a constitution and by-laws. This committee should be instructed to report at the next meeting. A convenient time of adjournment is fixed on, and if there be no further business, the meeting adjourns.

When the time for the second meeting arrives, the same officers continue, without any new motion. If either be absent, his place is supplied, on motion, by some other. The Committee on the Constitution and By-laws reports. If the constitution is not accepted, those present suggest amendments. As soon as it has taken the required shape, it is adopted, and signed by those present. The by-laws are treated in the same way.

The society is now formed, but not fully organized. The officers provided for by the constitution have now to be elected. This may be done at that meeting, or the society may be adjourned over for that purpose. So soon as it has been done, the chairman of the meeting gives way to the newly-elected president, or, in his absence, to a vice-president; the secretary of the meeting vacates his seat, which is taken by the newly elected secretary or secretaries, and thus the organization of the new body is complete.

FORMS OF CONSTITUTIONS.

A constitution is the formal written agreement, making the fundamental law which binds the parties who associate. In preparation of this, useless words should be avoided.

The constitution, after having been adopted, should be engrossed in a blank book, and signed by the members. Amendments or alterations should be entered in the same book, with the date of their adoption, in the shape of a copy for the minutes; and a side-note inserted in the margin of the constitution, opposite the article amended, showing on what page the amendment may be found.

LYCEUMS OR INSTITUTIONS.

PREAMBLE.—Whereas, experience has shown that knowledge can be more readily acquired by combination of effort than singly, we, whose names are hereunto annexed, have agreed to form an association, to be known as [*here insert title*], and for its better government, do hereby establish the following constitution:

ARTICLE I.—The name, style, and title of this association shall be [*here insert name*], and its objects shall be the increase and the diffusion of knowledge among its members.

ARTICLE II.—1. The officers of this association shall consist of a president, two vice-presidents, a corresponding secretary, a recording secretary, a treasurer, a librarian, and a curator, who shall be elected annually on [*here insert time of election and mode, whether by open voice or by ballot*].

2. The said officers shall hold their offices until their successors shall have been elected; and their powers and duties shall be similar to those of like offices in like associations.

ARTICLE III.—There shall be appointed by the president, immediately after his election, by and with the consent of the association, the following standing committees, to consist of five members each, namely: on finance, library, museum, lectures, and printing, who shall perform such duties and take charge of such business as may be assigned to them by vote of the association.

ARTICLE IV.—1. Any person residing within [*here state limits*], who is above the age of twenty-one years, may become a resident member of this association, by consent of a majority of the members present at any stated meeting succeeding the one at which his name shall have been proposed; any person residing within the limits aforesaid may be chosen in like

manner, a corresponding member; and any person who is eminent in science or literature, may be elected an honorary member.

2. Each and every resident member, upon his election, shall sign this constitution, and pay over to the recording secretary the sum of [*here insert the sum*], and shall pay the like sum annually in advance; but no dues or contributions shall be demanded of corresponding or honorary members.

ARTICLE V.—1. This association shall be divided into the following sections, namely: 1. Natural Science; 2. Arts; 3. History; 4. Agriculture and Horticulture; 5. Mental and Moral Philosophy; 6. General Literature; to each of which sections shall be referred all papers or business appropriate to its department; and to one or more of these sections each member, immediately after his election, shall attach himself.

2. Each section shall report, from time to time, upon the business intrusted to it, as this association shall direct.

ARTICLE VI.—This association shall meet monthly [*here insert time*], and at such other times as it may be called upon by the president, upon the written request of six members; of each of which meetings due notice shall be given, and at each and all of these meetings, six members shall constitute a quorum for the transaction of business.

ARTICLE VII.—The rules of order embraced in "The Rules of Debate and Chairman's Assistant," shall govern the deliberations of this association so far as the same may apply; and the order of business therein laid down shall be followed, unless suspended or transposed by a two-third vote.

ARTICLE VIII.—Any member who shall be guilty of any public, felonious offence against the law, or who shall persevere in a course of conduct degrading of itself or calculated to bring this association into odium, may be expelled by a two-thirds vote of the members present at any stated meeting; and any member who shall neglect or refuse to pay his dues for more than one year, shall thereby cease to be a member of this association; but no member shall be expelled until due notice shall be given him of the charges brought against him, and until he shall have had the opportunity of being confronted with his accusers, and of being heard in his own defence.

ARTICLE IX.—This constitution may be altered, amended, or abrogated, at any stated meeting, by a vote of two-thirds of the members present; *provided*, that written notice of said alteration, amendment, or abrogation, shall have been given at a previous stated meeting.

RULES OF ORDER.

QUORUM.

1. A quorum is a sufficient number to legally transact business. A majority of the members of any association constitutes a natural quorum; but a smaller number is usually made a quorum by a provision to that effect in the constitution or by-laws, through motives of convenience.

2. If there be a quorum present at the hour named for the meeting, or within thirty minutes thereafter, the presiding officer takes the chair, and calls the association to order; if not, he waits a reasonable time, and from the chair announces that no quorum is present. Thereupon no further business is in order, except to adjourn for want of a quorum. But it will be in order to call the roll of members, and to make endeavour to obtain the presence of enough to form the quorum.

3. During the transaction of business, should it be observed that no quorum is present, the chair may announce the fact, or any member may call for a count. If, on counting, it be found that there is no quorum, business is suspended until a quorum be found. If not to be had, the meeting must be adjourned.

4. If, on calling the ayes and noes, or on a division, a quorum be not found, the vote is null, and at the next meeting the unfinished business is in the exact state it was when the absence of a quorum was discovered.

CALL.

1. On a call of the body, each member rises as he is called, and answers to his name, and the absentees are noted. In a small body it is not necessary to rise.

MINUTES.

1. The presiding officer having taken the chair, and a quorum being present, the minutes are read. If there be any mistakes in the record, these are amended, and then the minutes are adopted. If, under any circumstances requiring haste, or in the absence of the journal, the reading of the minutes be suspended, they may be either read and adopted at another stage of the proceedings, or at the next succeeding meeting. Nevertheless, the minutes being a record of facts, any error subsequently discovered may be amended at any time. This may be done by unanimous consent; or, if objection be made, then any member who voted in the affirmative on their adoption, can move a reconsideration of the motion to

adopt. This last motion prevailing, the minutes are open to amendment; and after being amended, the motion on their adoption as amended is put.

2. The rule of record in ordinary associations is somewhat different from that in legislative bodies. The minutes of the former stand in lieu of the journals of the latter. The former never contain a question which is interrupted by a vote to adjourn, or to proceed to the order of the day; the the latter always do. Even propositions withdrawn, or ruled out of order, may be entered, as so treated. The minutes are to be full and explicit, and a true record of all that was done, but not of all that was said, unless the latter be necessary to the clear understanding of the business.

3. Proceedings in committee of the whole are, of course, not entered on the minutes—the entry merely that the committee rose and reported thus, and so, and what was done thereon by the association.

PRESIDING OFFICER.

In the absence of the president, or in case he declines, the vice-president takes the chair. If there be more than one vice-president, then they take it in their numerical order, unless the association, by vote, designate a particular one. If neither president nor vice-president be present some member is called to act temporarily as chairman, on motion put by the mover thereof.

RECORDING OFFICER.

In the absence of the secretary, or, if more than one, in the absence of all, a temporary secretary must be appointed on motion.

ARRANGEMENT OF BUSINESS.

This, in associations, is usually provided for in the by-laws. If not otherwise provided for, it is as follows:—1. Reading the minutes; 2. Reports of standing committees; 3. Reports of special committees; 4. Special orders; 5. Unfinished business; 6. New business. The election of new members, unless otherwise ordered, is always in order; and the election of officers ranks as a special order; but an election of members is not in order while other business is pending, or while a member has the floor.

ORDERS.

There is only one case where a member has a right to insist on anything, and that is where he calls for the execution of an existing order. No debate nor delay can be had on it; but where it is for an order of the day,

fixing some particular business to be taken up, then the president, on call of a member, puts the question whether the association will proceed to the order of the day. If it is decided in the negative, that is, in effect, a reversal of the former order, and the association decides to proceed to other business.

COMMITTEES.

1. Standing committees are appointed under the constitution or by-laws of the association, or by resolution, and sit permanently, while special committees are usually appointed by resolution to attend to some particular business, which being done, they are usually discharged.

2. The first-named person acts as chairman of any committee. It is true that the committee possesses the inherent power to choose its own chairman; but custom prevents this power from being used. Should a committee select some other than the first-named as chairman, it would be considered a wanton insult.

3. It is always proper to place the mover of a successful motion on any committee arising through his resolution, and to name him first; but if the committee is upon an inquiry into his conduct, or where its deliberation concerns himself personally, or his manifest interest, the rule is not followed.

4. As near as they will apply, the rules of order of the main body govern the deliberations of committees.

5. A committee to whom a resolution or affirmative proposition is committed should always have a majority of members, if they can be had, favourable to such resolution or proposition.

6. Unless otherwise ordered, the chair appoints all committees.

7. When there is a standing committee on any subject, anything referring to such subject should be referred to that committee alone; but it may be given to a special committee, if the association think proper.

8. Standing committees require no order to report. They are always in session, and should report at every meeting, if only to report progress.

9. A committee cannot sit while the main body is in session, unless so ordered to do.

10. A majority of a committee must concur in a report; but the minority are never refused leave to bring in a counter report.

11. Sometimes a majority cannot be found, when the committee should report the fact of their disagreement, and ask leave to be discharged; they are then to be discharged, and either a new committee raised, or the subject brought before a committee of the whole, or before the main body.

12. Persons appointed upon a committee should join that committee so soon as they are notified of their appointment, unless they are excused; as it is the duty of the first-named member of the committee to call his fellows together as soon as possible.

COMMITTEE OF THE WHOLE.

1. If it be necessary to go into committee of the whole society, either for a general or specific purpose, it is done by motion, when the chairman vacates the chair, and calls some member to it to act as chairman; though the committee of the whole, if it chooses, can select another chairman like any other committee. This it never does.

The quorum of the committee is the same as that of the main body. If a quorum be found wanting, the committee has to rise, the regular chairman takes his seat, and the chairman of the committee informs him that the committee rises for want of a quorum. Then the usual course is taken in regard to the absence of a quorum.

2. If any communication be made to the main body while in committee of the whole, the committee cannot receive it. If its reception be necessary, the committee have to rise.

3. If there be confusion or disturbance in committee of the whole, the president may take the chair, declare the committee dissolved, and reduce the body to order. In that case it requires another motion for that committee to sit again.

4. A committee of the whole cannot adjourn, but it must rise. It cannot take the previous question, nor take the ayes and noes.

5. If the business before the committee of the whole be unfinished, it rises on motion, the regular presiding officer takes the chair, and the chairman of the committee reports that the committee of the whole have, according to order, considered the business assigned to them, and have made progress therein, but, not having time to conclude the same, ask leave to sit again. Leave is then granted on motion. If the subject be a special one, and it is concluded, the motion is that the committee rise and report proceedings; then, when the president takes the chair, the chairman of the committee reports that the committee have gone through the business referred to them, and ask leave to report. Leave is then given to report then, or at some other time, either by motion, or, should there be no objection, on the call of some member.

6. In committee, members may speak oftener than once on the same subject, and are not confined strictly to the subject-matter. With these

and the foregoing exceptions, the same rules of order govern the committee of the whole as govern the main body.

7. A motion to rise and report progress is in order at any stage of the business, and is to be decided without debate. When they have reported, they may be discharged on motion, which brings the matter laid before them directly before the association itself.

COMMITMENT.

1. If it be desired to refer a resolution, address or other matter to a committee, it is done on motion. If to a special committee, the chair names the committee. Any member present may suggest one member on that committee, and if the main body do not object the chair will name him, since the silence of members in that case is equivalent to a direct appointment of that person by the association. But such a course is unusual, and generally improper.

2. Though the majority on a committee should be favourable to a measure, the minority may be of those who are opposed to it in some particulars. But those totally opposed to it should never be appointed; and if any one of that view be named, he should rise and state the fact, when the main body will excuse him from serving.

3. If it be a written matter which is referred, the secretary delivers it to the first named of the committee.

4. A committee meets when and where it pleases, unless the time and place is fixed for it. But it cannot act unless its members assemble together.

5. The committee cannot change the title or subject of the matter before it, but otherwise have full power over it.

6. If it be a written matter before it, if it originate with the committee, the writing must be considered paragraph by paragraph, and the question put on each. After each paragraph is approved or amended, it is then considered as a whole. If it has been referred, the committee only report the amendments they recommend separately; as they have no right to amend a paper belonging to the main body.

7. When the committee is through, some member moves that it rise, and report the matter to the main body, with or without amendments, as the case may be.

REPORTS OF COMMITTEES.

The chairman of the committee, standing in his place, informs the association that the committee to which was intrusted such a matter, naming

it, have directed him to report thereon, and moves that the report be received. The cry of "Receive!" or "Report!" or "Read it!" from any one, generally dispenses with the formality of a question. He then reads the report, whatever it may be, and delivers the written report to the secretary. Then it lies on the table until called up by a motion. The committee is dissolved, and can act no more unless reconstituted for the purpose by a vote.

MOTIONS.

1. A motion is a proposition by two members; consequently, if not seconded, it is not to be entertained. This is different, however, in the case of an appeal, where the question may be put on the demand of one member.

2. A motion must be put in writing, if any member desires it, and read, when required for information. But if the demand for the reading be repeated, so as to show itself a mere pretext for delay, the association may order it to be read no more.

3. A motion for adjournment cannot be made while one member is speaking; because it is a breach of order for one to speak when another has the floor, except to a point of order; consequently, even a privileged motion cannot be entertained. And even on a call to order, decided against him, he must still be allowed to go on, provided he does not persist in the same violation of order in his remarks.

AMENDMENTS.

1. An amendment takes the place of the question it is proposed to amend, and must be decided first. So an amendment to an amendment must be decided before the first amendment.

2. But amendments cannot be piled one on the other; that is, while you can amend an amendment, you cannot amend the second amendment.

3. For example: it is moved to give the thanks of the association for his kind gift of fifty volumes to the society. It is moved to amend by striking out the word "kind" and inserting "generous." This is an amendment. It is then moved to strike out the word "generous" and insert that of "liberal." This is an amendment to the amendment. It is then proposed to strike out the word "liberal," and insert that of "munificent." This third amendment is out of order.

4. Nor can amendments be made to certain privileged questions. Thus, an amendment to a motion to adjourn, for the previous question, a call of the house, or to lay on the table.

5. But an amendment, though inconsistent with one previously adopted, is still in order. It is for the association alone to decide whether, by the passage of the second amendment, it will recede from its former action.

6. On an amendment being moved, a member who has spoken to the main question, may speak to the amendment.

7. If it be proposed to amend by leaving out certain words, it may be moved to amend the amendment by leaving out a part of the words of the amendment, which is equivalent to letting those words remain.

8. For example: the original words being "Resolved that we have heard with feelings of lively satisfaction that the authorities of our town propose to tax dogs, and approve their action," it is moved to amend by striking out the words "with feelings of lively satisfaction." If it be moved to amend the amendment, by striking out the words "with feelings of satisfaction," the question would be: Shall those words stand as part of the resolution? If carried, the word "lively" is struck out, and the rest remains. The question then recurs on the resolution as amended.

9. When it is proposed to amend by inserting a paragraph, or part of one, the friends of this should make it perfect by amendments; because if it be inserted it cannot be amended, since it has been agreed to in that form. So if proposed to amend by striking out a paragraph, the friends of the paragraph should also make it as perfect, by amendments, as possible; for if the striking out be negatived, that is equivalent to agreeing to it in that form, and amendments are not admissible.

10. When it is moved to amend by striking out certain words and inserting others, the manner of stating the question is, first to read the whole passage to be amended, as it stands at present; then the words proposed to be struck out; next those to be inserted; and, lastly, the whole passage as it will be when amended. And the question, if desired, is then to be divided, and put first on striking out. If carried, it is next on inserting the words proposed. If that be lost, it may be moved to insert others.

11. A motion is made to amend by striking out certain words and inserting others in their place, which is negatived. Then it is moved to strike out the same words, and to insert others of a tenor entirely different from those first proposed, which is negatived. Then it is moved to strike out the same words and insert nothing, which is agreed to. All this is in order; because to strike out A and insert B, is one proposition. To strike out A and insert C is another proposition. To strike out A and insert nothing, is another proposition. The rejection of either proposition does not preclude the offering of a new one. But a motion to strike out alone being voted down, is equivalent to voting that the words should stand,

and amendments are not in order. Jefferson thinks that even if the question be divided, and taken first on the striking out, and that fails, amendments are in order, because the proposition is only half put. There is force in this, and it seems to be the practice.

12. After the paragraph is amended, it nevertheless may be further amended by striking it entirely out.

PRIVILEGED QUESTIONS.

1. "When a question is under debate, no motion shall be received but to adjourn, to lay on the table, to postpone indefinitely, to postpone to a day certain, to commit, or to amend; which several motions shall have precedence in the order they stand arranged; and the motion to adjourn shall be always in order, and shall be decided without debate."

2. These privileged questions shall not only be entertained while the main question is pending, but will be put before it.

3. A motion to adjourn takes precedence of all others, because otherwise the body might be kept sitting against its will, and indefinitely. Yet even this question cannot be entertained after another question is actually put, and while members are voting upon it.

4. An order of the day—that is, a question which has previously been set down to be argued or determined on that day—takes precedence of all questions except adjournment. If, for instance, a matter be set down for seven o'clock, then at that hour, although another question may be before the body, a motion to proceed to take up the order of the day must be received by the chair.

5. These privileged questions sometimes conflict with each other, but are reconciled under known rules.

6. If the previous question be first moved, it is first put. This cuts off all the others. The society, having decided to take the question, must vote on it as it stands—postponement, commitment, and amendment being out of order.

7. If postponement be carried, of course the question cannot be either committed, amended, nor the previous question be carried, for the subject is not before the body.

8. If committed, the same rules and reasons follow.

9. If amendment is first moved, the question on that must be determined before the previous question.

10. If amendment and postponement are proposed, the latter is put first. The reason is, that the amendment is not suppressed, but comes up again in its order whenever the main question is again considered.

11. If a motion for amendment be followed by one for commitment, the latter shall be put first.

12. The previous question cannot be put on the motion to postpone, commit, or amend the main question.

13. The motion for the previous question, or for commitment or amendment, cannot be postponed.

14. A motion made for reading papers relative to the question discussed, must be put before the main question.

15. A motion made and seconded cannot be withdrawn without leave, though, if no member object, it is not necessary to put the question.

16. When different sums or dates are used in filling blanks, the question shall first be put on the largest sum and the longest time.

17. In commitment, the motions to commit are privileged in the following order: 1. Committee of the Whole; 2. Standing Committee; 3. Special Committee.

18. A motion to lay on the table must be put before either postponement, commitment, or amendment, although neither of these last can be laid on the table.

19. A postponement can be amended as to time, and an amendment can be amended; but if it be proposed to amend by inserting anything, a motion to amend or perfect the matter proposed to be inserted must be put to a vote before the question to insert. The same rule follows in regard to striking out.

20. A question of privilege, such as a quarrel between members, or affecting the character of members, or the main body, must be disposed of before the original question be disposed of.

21. Questions on leave to withdraw motions, or appeals from the decision of the chair, have a precedence over the main question.

PREVIOUS QUESTION.

1. When any question is before the association, any member may move that the main question be put; and this is termed moving the previous question. If the motion pass in the affirmative, the main question is put immediately, and no further debate is allowed upon the matter at issue.

2. This is frequently styled "the gag law," because its adoption cuts off all debate. When a subject in the judgment of the majority has been exhausted, or when personalities have been introduced, and disorders are threatened, it is a very proper and wise thing; but it should not generally be brought to bear so long as members who desire to speak are unheard.

DIVISION OF THE QUESTION.

1. A question which contains more parts than one may be divided, on the demand of a member, provided the main body concur. If the question contain parts which are evidently incompatible, the presiding officer may divide them of his own will, unless the body deny him the power.

2. When a question is divided, after the question has been taken on the first member of it, the second member is still open to amendment and debate, unless the previous question be taken upon it.

COEXISTING QUESTIONS.

1. Occasionally there are two questions up at the same time—one primarily, and the other secondarily. Are both subject to debate?

2. When it has been moved to commit a question, the main question is debatable under that motion; but no amendment can be entertained, because the question of commitment will be first put.

EQUIVALENT QUESTIONS.

Where questions are equivalent, so that the rejection of one is the affirming of the other, that necessarily determines the latter. Thus, a vote against striking out is virtually the same as a vote to agree; a vote to reject is equivalent to a vote to adopt; but, on a motion to strike out A and insert B being decided in the negative, this does not preclude the motion to strike out A and insert C, these being separate questions.

THE QUESTION.

1. The question is first to be put on the affirmative, and then on the negative side.

2. After the question has been put, debate upon it is out of order; but after the presiding officer has put the affirmative, any member who has not spoken before on the question may speak before the negative be put, for it is not a full question until the negative be put.

3. But on trifling matters, such as leave to bring in reports of committees, withdrawing motions, reading papers, and such like, the consent of the main body will be supposed without the formality of a question, unless some one should object, for the absence of an objection in such cases testifies to unanimous consent.

DIVISION.

1. The affirmative and negative voices having been heard upon a question, the presiding officer declares by the sound what is the result. If he have doubts as to the relative strength of yeas and nays, or if any member demands it, before other business has been gone into, then a division is ordered.

2. The mode of dividing is for those in the affirmative to rise, when the presiding officer counts those, and announces the number. These sit, and those in the negative arise, to be counted in like manner.

3. One-fifth of the members present may call for the yeas and nays, each member's name being called, and his answer entered by the secretary.

In case of any disorder during a division or calling of the yeas and nays, the presiding officer decides the question of order; and the decision is not the subject of appeal at this time, although it may be revised after the division or call is over. (See Rule XXXIII.)

RECONSIDERATION.

1. A question which has been decided either in the affirmative or in the negative, may be reconsidered upon the motion of a member who has voted with the majority. But this motion for reconsideration will not be in order, unless made during the meeting whereat the question was decided.

2. The effect of the adoption of a motion to reconsider is to place the question in the position it occupied before the vote on its adoption or rejection was taken; consequently it is as open to amendment, postponement, commitment, or laying on the table, as it was at that time.

APPEALS.

1. An appeal from the decision of the chair is a matter of right, and brings under review and opens to debate the grounds of such decision.

2. The presiding officer, by usage and courtesy, has the right to assign his reasons for his decision before the question is put on the appeal.

3. The question on an appeal is, whether the decision of the presiding officer shall stand as the judgment of the body itself. If a majority vote in the affirmative, the decision stands; if not, it is reversed.

4. An appeal cannot be put on an appeal; that is, a second appeal cannot be entertained while the first remains undisposed of.

5. A mere opinion of the chair, drawn out by an interrogation on points of order, is not subject to an appeal. To be appealed from, it must be an actual decision on a question coming up legitimately in the progress of business.

PAPERS.

1. When papers have been laid before the main body, or referred to a committee, every member has a right to hear them once read at the secretary's table, before he can be compelled to vote on them.

2. But he has not a right, therefore, to have papers read independently of the will of a majority of his colleagues. If the reading be demanded purely for information, and not for delay, and no one objects, the chairman will direct it to be done, without putting it to the question. But should any one object the question must be put.

3. Nor can any member have a right, without a question first put, to have any thing read, which is not before the body,

4. Nor can a member have a right to read a paper, in his place, not even his own speech, if it be objected to without the leave of the body. But this rule is not usually enforced, unless there be a gross or intentional abuse of the time and patience of the body.

COMMUNICATIONS.

When a communication addressed to the main body is presented, the question is to be put whether it shall be received. But a general cry of "Receive!" or, even if there be no objection, the silence of the body, is sufficient to dispense with the formality of the question. In that case, or in case the vote on its reception be in the affirmative, it is to be read unless otherwise disposed of.

THINGS ON THE TABLE.

1. Matters which have been laid on the table can only be called up when the class of business to which they belong is in order.

2. If laid on the table by a motion, they can only be lifted from it by a motion. If laid there under rules, as a matter of course, they can be called up by any member as a matter of right, when the business to which they belong is reached in its regular order.

3. But it is deemed discourteous, when the matter lies on the table, to call it up in the absence of the mover, or against his wishes, if present, provided it refers to a matter of local or private concern, in the mover's

special charge; and provided further, that it is not designed or calculated to delay final action on any measure or proposition before the body, or impede the progress of business.

RESOLUTIONS.

All resolutions must be committed to writing, if demanded, and the name of the mover should be signed thereto.

RIGHTS OF MEMBERS.

1. It is the right of a member to have the question put on his motion, and a refusal to do this is a breach of order on the part of the chair.

2. It is the right of a member to insist on the execution of a standing order of the body.

And it is the right of a member, if he observe that a quorum is not present during the transaction of business, to call for a count.

Miscellaneous Tables for Reference.

Herschel's Weather Table.

FOR FORETELLING THE WEATHER THROUGHOUT ALL THE LUNATIONS OF EACH YEAR, FOREVER.

This table is the result of many years' actual observation, the whole being constructed on a due consideration of the attraction of the Sun and Moon in their several positions respecting the Earth, and will, by simple inspection, show the observer what kind of weather will most probably follow the entrance of the Moon into any of its quarters.

If the New Moon, First Quarter, Full Moon, or Last Quarter, happens—	*IN SUMMER.*	*IN WINTER.*
Between midnight and 2 o'clock.	Fair	Frost unless wind south-west.
" 2 and 4 morning	Cold and showers	Snow and stormy.
" 4 " 6 "	Rain	Rain.
" 6 " 8 "	Wind and rain	Stormy.
" 8 " 10 "	Changeable	Cold rain if wind west, snow if east
" 10 " 12 "	Frequent showers	Cold and high wind.
" 12 " 2 afternoon	Very rainy	Snow or rain.
" 2 " 4 "	Changeable	Fair and mild.
" 4 " 6 "	Fair	Fair.
" 6 " 8 "	Fair if wind north-west	Fair and frosty if wind N. or N.E.
" 8 " 10 "	Rainy if south or S.W.	Rain or snow if south or south-west.
" 10 " midnight	Fair	Fair and frosty.

Foreign Governments.

COUNTRY.	CAPITAL.	NAME OF RULER.	TITLE.	Population.	Area Square Miles.
Abyssinia	Magdala	Johannes I	King	40,000,000	175,000
Afghanistan	Candahar	Yakoob Khan	Shah	7,000,000	300,000
Anam (Cochin-China)	Ketcho	Tu Duc	King	21,000,000	600,000
Andorra	Andorra	A. Querada	1st Syndic	20,000	190
Argentine Republic	Buenos Ayres	Senor Avellameda	President	1,877 500	1,000,000
Austria	Vienna	Francis Joseph I	Emperor	38,000,000	258,000
Belgium	Brussels	Leopold II	King	5,253,821	12,500
Beloochistan	Kelat	Mir Nasa Khan	Khan	2,000,000	160,000
Brazil	Rio de Janeiro	Pedro II	Emperor	11,000,000	3,000,000
Bokhara	Bokhara	Mozaffar-ed-di	Khan	2,000,000	235,000
Bolivia	La Paz	Adolpho Ballivian	President	2,000,000	318,000
Borneo		Abdul Munem	Sultan	1,750,000	300,000
Burman Empire	Monchobo	Mendoonmen	King	8,000,000	200,000
Chili	Santiago	Errazuriz	President	2,350,000	144,000
China	Pekin	Tsaeteen	Emperor	415,000,000	5,300,000
Costa Rica	San Jose	J. M. Guardia	President	185,000	16,250
Dahomey	Dahomey	Adahounzon	King	300,000	
Denmark	Copenhagen	Christian IX	King	1,968,500	14,616
Egypt	Cairo	Ismail Pasha	Khedive	5,800,000	175,800
Ecuador	Quito	Don Antonio Borrero	President	1,146,000	300,000
Fiji Islands	Ovalau	Ceded to Great Britain	King	250,000	
France	Paris	Jules Grevy	President	36,905,788	204,825
German Empire				45 194,172	135,806
Prussia	Berlin	William	Emperor	27,251,667	746,042
Saxony and States				2,970,220	5,779
Lubeck (Free towns)				63,571	5.21
Hamburg (Free towns)				454,041	4 76
Bremen (Free towns)				156,229	7.44
Bavaria (S. Germ.)	Munich	Ludwig II	King	5,271,516	26,560
Wurtemberg (S. Germ.)	Stuttgart	Charles I	King	1,970,132	7,600
Baden (S. Germ.)	Carlsruhe	Frederic	G. Duke	1,670,589	5,712
Hesse-Darmstadt (S. Germ.)	Darmstadt	Louis III	G. Duke	936,944	13,964
Alsace Lorraine (S. Germ.)				1,571,971	25,760
Great Britain	London	Victoria	Queen	29,307,109	121,115
Greece	Athens	George I	King	1 700,000	19,959
Guatemala	Guatemala	Don I. Rufino Barrios	President	1,200,000	15,000
Hayti	Port au Prince	Gen. B. Canal	President	960,000	11,718
Honduras	Comayague	Gen. J. M. Medina	President	350,000	47 000
Italy	Rome	Humbert I	King	27,482,174	98,154
Japan	Tokio	Mutsuhito	Emperor	34,338,400	206,500
Khokan	Khokan		Khan	1,000,000	
Liberia	Monrovia	Jas. S. Payne	President	718,000	
Madagascar	Tananarivo	Ramavolo II	Queen	3,000,000	225,000
Mexico	Mexico	Gen. Porfiris Diaz	President	9,400,000	340,615
Montenegro	Cetigne	Nicholas I	Hospodar	286,000	450,000
Mosquito	Blewfields	Tamaso	King		34,000
Morocco	Fez	Muhni Hassan	Sultan	7,000,000	25,000
Muscat	Muscat	Seyyed Toorkee bin Said	Imaum	1,500,000	176,000
Netherlands	Amsterdam	William III	King	4,000,000	12,685
New Granada	Bogota	Don Santiago Perez	President	3,000,000	333,000
Nicaragua	Managua	Don Vincente Cuadra	President	300,000	57 000
Norway	Christiania	Oscar II. of Sweden		1,807,000	121,000
Orange Free States	Bloemfontein	I. H. Brand	President	50,000	70 000
Paraguay	Asuncion	John B. Gill	President	1,400,000	85,000
Persia	Teheran	Nassir ed Din	Shah	8,000,000	648 000
Peru	Lima	Senor Manuel Prado	President	3,374,000	558,000
Portugal	Lisbon	Luis I	King	4,435,000	34,491
Roumania	Bucharest	Charles	Hospodar	5,400,000	27,500
Russia	St. Petersburg	Alexander III	Emperor	86,536,014	7,710,882
Sarawak	Kuching	Charles Brooke Santiago	Rajah	200,000	
Sandwich Islands	Honolulu	David Kalakaua	King	73,000	6,700
San Salvador	San Salvador	Senor Andrea Valle	President	600,000	7,500
Servia	Belgrade	Milan Obrenovitch	King	1,500,000	12,600
Siam	Bang Kok	Chan Fa Chule Long Korn	King	5,700,000	250,000
Spain	Madrid	Don Alfonso XII	King	16,835,506	193 503
Switzerland	Berne	M. Scherer	President	2 900,000	15,991
Sweden	Stockholm	Oscar II	King	4,530,000	128,776
St. Domingo	San Domingo	Gen. Ig. Gonzalez	President	250,000	18 000
Turkey	Constantinople	Abdul Hamid II	Sultan	45,000,000	2,210,000
Uruguay	Montevideo	Don Jose Ellauri	President	450,000	75,000
Venezuela	Caracas	A. Guzman Blanco	President	1,800,000	426 000

Populations of the Principal Cities of the Old World.

	Population.		Population.		Population.
London, England	3,882,092	Lyons, France	325,000	Venice, Italy	128,901
Foochow, China	2,000,000	Dublin, Ireland	245,722	Turin "	207,770
Paris, France	2,000,000	Madrid, Spain	235,000	Florence, "	167,093
Pekin, China	1,648,814	Leeds, England	259,201	Milan, "	200,000
Jeddo, Japan	1,554,848	Sheffield, "	239,947	Copenhagen, Denmark	181,291
Canton, China	1,236,000	Bristol, "	182,524	Stockholm, Sweden	135,000
Const'inople, Turkey	1,075,000	Belfast, Ireland	174,394	Antwerp, Belgium	127,000
Bombay, India	646,636	Amsterdam, Holland	215,600	Ghent, "	121,469
Calcutta, India	616,249	Cairo, Egypt	313,383	Damascus, Syria	120,000
Berlin, Prussia	828,013	Lisbon, Portugal	224,063	Smyrna, Turkey	150,000
Glasgow, Scotland	477,144	Hamburg, Germany	337,940	Prague, Bohemia	157,275
Vienna, Austria	617,514	Brussels, Belgium	172,000	Alexandria, Egypt	238,888
St. Petersburg, Russia	680,000	Dresden, Saxony	177,095	Marseilles, France	305,000
Rio de Janeiro, Brazil	420,000	Munich, Bavaria	190,000	Bordeaux, "	196,000
Liverpool, England	493,346	Naples, Italy	448,743	Lille, "	156,000
Birmingham, England	343,696	Rome, "	244,484	Melbourne, Australia	256,501
Manchester, England	355,665	Genoa, "	130,269	Sydney, Aus., & suburbs	200,000
Edinburgh, Scotland	196,500	Palermo, "	219,398	Auckland, N. Zealand	31,400

Number of Plants per Acre.

NUMBER OF PLANTS OR TREES THAT CAN BE PLANTED ON AN ACRE OF GROUND AT THE FOLLOWING DISTANCES APART.

Number of Feet apart.	*Number of Plants.*	*Number of Feet apart.*	*Number of Plants.*	*Number of Feet apart.*	*Number of Plants.*
1 by 1	43,560	5 by 2	4,350	15 by 15	193
1½ " 1½	19,360	5 " 3	2,904	16 " 16	170
2 " 1	21,780	5 " 4	2,178	17 " 17	150
2 " 2	10,890	5 " 5	1,742	18 " 18	134
2½ " 2½	6,969	5½ " 5½	1,417	19 " 19	120
3 " 1	14,520	6 " 6	1,210	20 " 20	108
3 " 2	7,260	6½ " 6½	1,031	24 " 24	75
3 " 3	4,840	7 " 7	888	25 " 25	69
3½ " 3½	3,555	8 " 8	680	27 " 27	59
4 " 1	10,890	9 " 9	537	30 " 30	48
4 " 2	5,445	10 " 10	435	40 " 40	27
4 " 3	3,630	11 " 11	360	50 " 50	17
4 " 4	2,722	12 " 12	302	60 " 60	12
4½ " 4½	2,151	13 " 13	257	66 " 66	10
5 " 1	8,712	14 " 14	222		

How to Estimate Crops per Acre.

Frame together four light sticks exactly a foot square inside, and with this in hand walk into the field and select a spot of fair average yield, and lower the frame square over as many heads as it will enclose. Shell out the heads thus enclosed carefully, and weigh the grain. It is fair to presume that the product will be the 43,560th part of an acre's produce. To prove it, go through the field and make ten or twenty similar calculations, and estimate by the mean of the whole number of results. It will certainly enable a farmer to make a closer calculation of what a field will produce than he can do by guessing.

A Mile Measure.

A standard English mile, which is the measure that we use, is 5,280 feet in length, 1,760 yards, or 320 rods. A strip one rod wide and one mile long, is two acres. By this it is easy to calculate the quantity of land taken up by roads, and also how much is wasted by fences.

The Creeds of the World.

Christians	380,000,000
Buddhists	360,000,000
Other Asiatic Religions	269,000,000
Mohammedans	165,000,000
Jews	7,000,000
Pagans	200,000,000

TABLE—Showing the Principal Countries of the World, their Population, Religion, and Government.

NAME OF COUNTRY.	Population.	Capital.	Religion.	Form of Government.	Date of Census.
China	450,000,000	Pekin	Buddhist	Monarchy	1871
British Empire	226,817,108	London	Protestant	Monarchy	1871
Russia	85,685,945	St. Petersburg	Greek Church	Monarchy	1871
United States	50,152,559	Washington	Protestant	Republic	1880
France	36,102,921	Paris	Roman Catholic	Republic	1872
Austria and Hungary	35,904,435	Vienna	Roman Catholic	Monarchy	1869
Japan	32,794,897	Yeddo	Shinto	Monarchy	1875
Great Britain and Ireland	31,628,338	London	Protestant	Monarchy	1871
German Empire	42,726,844	Berlin	Protestant	Imperial Confederation	1875
Prussia	25,772,562	Berlin	Protestant	Monarchy	1875
Turkey	*22,000,000	Constantinople	Mohammedan	Monarchy	
Italy	26,801,154	Rome	Roman Catholic	Monarchy	1871
Spain	16,642,000	Madrid	Roman Catholic	Monarchy	1870
Brazil	9,448,233	Rio Janeiro	Roman Catholic	Monarchy	1872
Mexico	9,173,000	Mexico	Roman Catholic	Republic	1874
Sweden	4,383,291	Stockholm	Protestant	Monarchy	1875
Persia	4,400,000	Teheran	Mohammedan	Monarchy	1870
Belgium	5,253,821	Brussels	Roman Catholic	Monarchy	1873
Bavaria	5,024,832	Munich	Roman Catholic	Monarchy	1875
Portugal	3,995,152	Lisbon	Roman Catholic	Monarchy	1868
Netherlands	3,809,527	The Hague	Protestant	Monarchy	1875
Colombia	2,913,343	Bogota	Roman Catholic	Republic	1871
Chili	2,068,447	Santiago	Roman Catholic	Republic	1875
Switzerland	2,609,147	Berne	Protestant	Republic	1870
Peru	3,199,000	Lima	Roman Catholic	Republic	1871
Bolivia	1,987,352	Chuquisaca	Roman Catholic	Republic	1861
Norway	1,817,237	Christiana	Protestant	Monarchy	1875
Argentine Republic	1,736,922	Buenos Ayres	Roman Catholic	Republic	1869
Wurtemburg	1,881,505	Stuttgart	Protestant	Monarchy	1875
Denmark	1,874,000	Copenhagen	Protestant	Monarchy	1874
Venezuela	1,784,194	Carraccas	Roman Catholic	Republic	1873
Greece	1,506,531	Athens	Greek Church	Monarchy	1870
Guatemala	1,680,000	Guatemala	Roman Catholic	Republic	1865
Ecuador	†1,800,000	Quito	Roman Catholic	Republic	
Paraguay	221,079	Asuncion	Roman Catholic	Republic	1873
Liberia	718,000	Monrovia	Protestant	Republic	1871
San Salvador	434,520	San Salvador	Roman Catholic	Republic	1870
Hayti	†572,000	Port au Prince	Roman Catholic	Republic	
Nicaragua	350,000	Managua	Roman Catholic	Republic	1876
Uruguay	450,000	Monte Video	Roman Catholic	Republic	1873
San Domingo	†250,000	San Domingo	Roman Catholic	Republic	
Costa Rica	165,000	San Jose	Roman Catholic	Republic	1870
Sandwich Islands	†71,000	Honolulu	Protestant	Republic	

* Estimated since Peace of 1878. † Estimated.

Names and their Signification.

Aaron, *Hebrew*, a mountain.
Abel, *Hebrew*, vanity.
Abraham, *Hebrew*, the father of many.
Adolphus, *Saxon*, happiness and help.
Albert, *Saxon*, all bright.
Alexander, *Greek*, a helper of men.
Alfred, *Saxon*, all peace.
Ambrose, *Greek*, immortal.
Amos, *Hebrew*, a burden.
Andrew, *Greek*, courageous.
Anthony, *Latin*, flourishing.
Archibald, *German*, a bold observer.
Arnold, *German*, a maintainer of honour.
Arthur, *British*, a strong man.
Augustus, Augustin, } *Latin*, venerable, grand.
Baldwin, *German*, a bold winner.
Bardulph, *German*, a famous helper.
Barnaby, *Hebrew*, a prophet's son.
Bartholomew, *Hebrew*, the son of him who made the waters rise.
Beaumont, *French*, a pretty mount.
Bede, *Saxon*, prayer.
Benjamin, *Hebrew*, the son of a right hand.
Bennet, *Latin*, blessed.
Bernard, *German*, bear's heart.
Bertram, *German*, fair illustrious.
Boniface, *Latin*, a well-doer.
Brian, *French*, having a thundering voice.
Cadwallader, *British*, valiant in war.
Cæsar, *Latin*, adorned with hair.
Caleb, *Hebrew*, a dog.

Cecil, *Latin*, dim-sighted.
Charles, *German*, noble-spirited.
Christopher, *Greek*, bearing Christ.
Clement, *Latin*, mild-tempered.
Conrad, *German*, able counsel.
Constantine, *Latin*, resolute.
Crispin, *Latin*, having curled locks.
Cuthbert, *Saxon*, known famously.
Daniel, *Hebrew*, God is judge.
David, *Hebrew*, well-beloved.
Denis, *Greek*, belonging to the god of wine.
Dunstan, *Saxon*, most high.
Edgar, *Saxon*, happy honour.
Edmund, *Saxon*, happy peace.
Edward, *Saxon*, happy keeper.
Edwin, *Saxon*, happy conqueror.
Egbert, *Saxon*, ever bright.
Elijah, *Hebrew*, God, the Lord.
Elisha, *Hebrew*, the salvation of God.
Ephraim, *Hebrew*, fruitful.
Erasmus, *Greek*, lovely, worthy to be loved.
Ernest, *Greek*, earnest, serious.
Evan or Ivon, *British*, the same as John.
Everard, *German*, well reported.
Eugene, *Greek*, nobly descended.
Eustace, *Greek*, standing firm.
Ezekiel, *Hebrew*, the strength of God.
Felix, *Latin*, happy.
Ferdinand, *German*, pure peace.
Francis, *German*, free.
Frederic, *German*, rich peace.
Gabriel, *Hebrew*, the strength of God.
Geoffery, *German*, joyful.
George, *Greek*, a husbandman.
Gerard, *Saxon*, all towardliness.
Gideon, *Hebrew*, a breaker.
Gilbert, *Saxon*, bright as gold.
Giles, *Greek*, a little goat.
Godard, *German*, a godly disposition.
Godfrey, *German*, God's peace.
Godwin, *German*, victorious in God.
Griffith, *British*, having great faith.
Guy, *French*, the mistletoe shrub.
Hannibal, *Punic*, a gracious lord.
Harold, *Saxon*, a champion.
Hector, *Greek*, a stout defender.
Henry, *German*, a rich lord.
Herbert, *German*, a bright lord.
Hercules, *Greek*, the glory of Hera or Juno.
Hezekiah, *Hebrew*, cleaving to the Lord.
Horatio, *Italian*, worthy to be beheld.
Howel, *British*, sound or whole.
Hubert, *German*, a bright colour.
Hugh, *Dutch*, high, lofty.
Humphrey, *German*, domestic peace.
Ingram, *German*, of angelic purity.
Isaac, *Hebrew*, laughter.
Jacob, *Hebrew*, a supplanter.
James or Jacques, beguiling.
Joab, *Hebrew*, fatherhood.
Job, *Hebrew*, sorrowing.
Joel, *Hebrew*, acquiescing.
John, *Hebrew*, the grace of the Lord.
Jonah, *Hebrew*, a dove.
Jonathan, *Hebrew*, the gift of the Lord.
Joscelin, *German*, just.
Joseph, *Hebrew*, addition.
Josias, *Hebrew*, the fire of the Lord.
Joshua, *Hebrew*, a Saviour.
Lambert, *Saxon*, a fair lamb.
Lancelet, *Spanish*, a little lance.
Laurence, *Latin*, crowned with laurels.
Lazarus, *Hebrew*, destitute of help.
Leonard, *German*, like a lion.
Leopold, *German*, defending the people.
Lewellin, *British*, like a lion.
Lewis, *French*, the defender of the people.
Lionel, *Latin*, a little lion.
Lucius, *Latin*, shining.
Luke, *Greek*, a wood or grove.
Mark, *Latin*, a hammer.
Martin, *Latin*, martial.
Mathew, *Hebrew*, a gift or present.
Maurice, *Latin*, sprung of a Moor.
Meredith, *British*, the roaring of the sea.
Michael, *Hebrew*, who is like God?
Morgan, *British*, a mariner.
Moses, *Hebrew*, drawn out.
Nathaniel, *Hebrew*, the gift of God.
Neal, *French*, somewhat black.
Nicolas, *Greek*, victorious over the people.
Noel, *French*, belonging to one's nativity.
Norman, *French*, one born in Normandy.
Obadiah, *Hebrew*, the servant of the Lord.
Oliver, *Latin*, an olive.
Orlando, *Italian*, counsel for the land.
Osmund, *Saxon*, house peace.
Oswald, *Saxon*, ruler of a house.
Owen, *British*, well descended.
Patrick, *Latin*, a nobleman.
Paul, *Latin*, small, little.
Percival, *French*, a place in France.
Peregrine, *Latin*, outlandish.
Peter, *Greek*, a rock or stone.
Philip, *Greek*, a lover of horses.
Phineas, *Hebrew*, of bold countenance.
Ralph, contracted from Radolph, or
Randal, or Ranulph, *Saxon*, pure help.
Raymund, *German*, quiet peace.
Reuben, *Hebrew*, the son of vision.
Reynold, *German*, a lover of purity.
Richard, *Saxon*, powerful.
Robert, *German*, famous in counsel.
Roger, *German*, strong counsel.
Rowland, *German*, counsel for the land.
Rufus, *Latin*, reddish.
Solomon, *Hebrew*, peaceable.
Samson, *Hebrew*, a little son.
Samuel, *Hebrew*, heard by God.
Saul, *Hebrew*, desired.
Sebastian, *Greek*, to be reverenced.
Simeon, *Hebrew*, bearing.
Simon, *Hebrew*, obedient.
Stephen, *Greek*, a crown or garland.
Swithin, *Saxon*, very high.
Theobald, *Saxon*, bold over the people.
Theodore, *Greek*, the gift of God.
Theodosius, *Greek*, given of God.
Theophilus, *Greek*, a lover of God.
Thomas, *Hebrew*, a twin.
Timothy, *Greek*, a fearer of God.
Toby or Tobias, *Hebrew*, the goodness of the Lord.
Valentine, *Latin*, powerful.
Vincent, *Latin*, conquering.
Vivian, *Latin*, living.
Walter, *German*, a wood master.
Walwin, *German*, a conqueror.
William, *German*, defending many.
Zaccheus, *Syriac*, innocent.

Zachary, *Hebrew*, remembering the Lord.
Zebedee, *Syriac*, having an inheritance.
Zedekiah, *Hebrew*, the justice of the Lord.

Adeline, *German*, a princess.
Agatha, *Greek*, good.
Agnes, *German*, chaste.
Alethea, *Greek*, the truth.
Althea, *Greek*, hunting.
Alice, Alicia, *German*, noble.
Amy, Amelia, *French*, a beloved.
Anna, Anne, or Hannah, *Hebrew*, gracious.
Arabella, *Latin*, a fair altar.
Aureola, *Latin*, like gold.
Barbara, *Latin*, foreign or strange.
Beatrice, *Latin*, making happy.
Benedicta, *Latin*, blessed.
Bernice, *Greek*, bringing victory.
Bertha, *Greek*, bright or famous.
Blanche, *French*, fair.
Bona, *Latin*, good.
Bridget, *Irish*, shining bright.
Cassandra, *Greek*, a reformer of men.
Catharine, *Greek*, pure or clean.
Charity, *Greek*, love bounty.
Charlotte, *French*, all noble.
Caroline, *feminine of Carolus; the Latin of Charles*, noble-spirited.
Chloe, *Greek*, a green herb.
Christiana, *Greek*, belonging to Christ.
Cecilia, *Latin*, from Cecil.
Cicely, *a corruption of Cecilia.*
Clara, *Latin*, clear or bright.
Constance, *Latin*, constant.
Deborah, *Hebrew*, a bee.
Diana, *Greek*, Jupiter's daughter.
Dorcas, *Greek*, a wild roe.
Dorothy, *Greek*, the gift of God.
Eadith, *Saxon*, happiness.
Eleanor, *Saxon*, all fruitful.
Eliza, Elizabeth, *Hebrew*, the oath of God.
Emily, *corrupted from Amelia.*
Emma, *German*, a nurse.
Esther, Hesther, *Hebrew*, secret.
Eve, *Hebrew*, causing life.
Eunice, *Greek*, fair victory.
Eudoia, *Greek*, prospering in the way.
Frances, *German*, free.
Gertrude, *German*, all truth.
Grace, *Latin*, favour.
Hagar, *Hebrew*, a stranger.
Helena, *Greek*, alluring.
Isabella, *Spanish*, fair Eliza.
Jane, *softened from Joan; or,*
Jeanne, *the feminine of John.*
Janet, Jeannette, little Jane.
Joyce, *French*, pleasant.
Judith, *Hebrew*, praising.
Julia, Juliana, *feminine of Julius.*
Letitia, *Latin*, joy or gladness.
Lois, *Greek*, better.
Lucretia, *Latin*, a chaste Roman lady.
Lucy, *Latin*, *feminine of Lucius.*
Lydia, *Greek*, descended from Lud.
Mabel, *Latin*, lovely.
Magdalene, Maudlin, *Syriac*, magnificent.
Margaret, *German*, a pearl.
Martha, *Hebrew*, bitterness.
Mary, *Hebrew*, bitter.
Maud, Matilda, *Greek*, a lady of honour.
Mercy, *English*, compassion.
Mildred, *Saxon*, speaking mild.
Nest, *British, the same as Agnes.*
Nicola, *Greek, the feminine of Nicholas.*
Olympia, *Greek*, heavenly.
Orabilis, *Latin*, to be entreated.
Parnell, or Petronella, little Peter.
Patience, *Latin*, bearing patiently.
Paulina. *Latin, feminine of Paulinus.*
Penelope, *Greek*, a turkey.
Persis, *Greek*, destroying.
Philadelphia, *Greek*, brotherly love.
Philippa, *Greek, feminine of Philip.*
Phœbe, *Greek*, the light of life.
Phyllis, *Greek*, a green bough.
Priscilla, *Latin*, somewhat old.
Prudence, *Latin*, discretion.
Psyche, *Greek*, the soul.
Rachel, *Hebrew*, a lamb.
Rebecca, *Hebrew*, fat or plump.
Rhode, *Greek*, a rose.
Rosamund, *Saxon*, rose of peace.
Rosa, *Latin*, a rose.
Rosecleer, *English*, a fair rose.
Rosabella, *Italian*, a fair rose.
Ruth, *Hebrew*, trembling.
Sabina, *Latin*, sprung from the Sabine.
Salome, *Hebrew*, perfect.
Sapphira, *Greek*, like a sapphire stone.
Sarah, *Hebrew*, a princess.
Sibylla, *Greek*, the counsel of God.
Sophia, *Greek*, wisdom.
Sophronia, *Greek*, of a sound mind.
Susan, Susanna, *Hebrew*, a lily.
Tabitha, *Syriac*, a roe.
Temperance, *Latin*, moderation.
Theodosia, *Greek*, given by God.
Tryphosa, *Greek*, delicious.
Tryphena, *Greek*, delicate.
Vida, *Erse, feminine of David.*
Ursula, *Latin*, a female bear.
Walburg, *Saxon*, gracious.
Winifred, *Saxon*, winning peace.
Zenobia, *Greek*, the life of Jupiter.

Facts about the Bible.

The Bible contains 66 books, 1,189 chapters, 31,173 verses, 773,692 words, and 3,586,489 letters. The word "AND" occurs 46,277 times; the word "LORD" 1,855 times; "REVEREND" but once; "GIRL" but once, in 3rd chapter and 3rd verse of Joel. The words "EVERLASTING PUNISHMENT" but once, and "EVERLASTING FIRE" but twice. The middle verse is the 8th verse of the 118th Psalm. The 21st verse of the 7th chapter of Ezra contains all the letters of the alphabet except the letter J. The finest chapter to read is the 26th chapter of the Acts of the Apostles. The 19th chapter of Second Kings and the 37th chapter of Isaiah are alike. The longest verse is the 9th verse of the 8th chapter of Esther. The shortest

is the 35th verse of the 11th chapter of St. John, viz.: "Jesus wept." The 8th, 15th, 21st, and 31st verses of the 107th Psalm are alike. Each verse of the 136th Psalm ends alike. There are no words of more length than six syllables.

Height of Noted Monuments and Buildings.

Monument or Building	*Where Located.*	*Height.*
Pyramid of Cheops	Egypt	543 feet.
Antwerp Cathedral	Belgium	476 "
Strassburg Cathedral	Germany	474 "
St. Martin's Church, Landshut	Bavaria	456 "
Pyramid of Cephrenes	Egypt	456 "
St. Peter's Cathedral	Rome	448 "
St. Paul's Cathedral	London	401 "
Salisbury Cathedral	England	400 "
Cathedral of Florence	Italy	384 "
Cathedral of Cremona	Italy	372 "
Church at Fribourg	Germany	370 "
Cathedral of Seville	Spain	360 "
Cathedral of Milan	Italy	355 "
Cathedral of Utrecht	Holland	356 "
Pyramid of Sakkarah	Egypt	356 "
Cathedral of Munich	Bavaria	348 "
Cathedral of St Mark, Venice	Italy	328 "
Apinelli Tower, Bologna	Italy	314 "
Capitol at Washington	United States,	300 "
Trinity Church, New York	United States,	284 "
Column at Delhi	India	262 "
Porcelain Tower, Nankin	China	248 "
Cathedral of Notre Dame, Paris	France	232 "
Bunker Hill Monument, Charlestown	United States,	220 "
Leaning Tower, Pisa	Italy	202 "
Washington Monument, Baltimore	United States,	183 "
Vendome Column, Paris	France	153 "
Trajan's Column	Rome	151 "

Time Required to Roast Various Articles of Food.

	H.	M.
A small capon, fowl, or chicken requires		20
A large fowl		45
A capon, full size		35
A goose	1	0
Wild ducks and grouse		15
Pheasants and turkey poults		20
A moderate-sized turkey, stuffed	1	15
Partridges		25
Quail		10
A hare or rabbit	about 1	0
Beef, ten pounds	2	30
Leg of pork, ¼ hour for each pound, and above that allowance		20
A chine of pork	2	0
A neck of mutton	1	30
A haunch of venison	about 3	30

Time Required to Boil Various Articles of Food.

	H.	M.
A ham, 20 lbs. weight, requires	6	30
A tongue (if dry) after soaking	4	0
A tongue out of pickle	2½ to 3	0
A neck of mutton	1	30
A chicken		20
A large fowl		45
A pigeon		15
A capon		35

Capacity of Noted Churches & Halls.

Name of Building.	*Location.*	*Contain*
St. Peter's Cathedral	Rome	54,000
Cathedral of Milan	Milan	37,000
St. Paul's Church	Rome	32,000
St. Paul's Cathedral	London	25,000
Church of St. Petronio	Bologna	24,000
Cathedral of Florence	Florence	24,000
Cathedral of Antwerp	Antwerp	24,000
Mosque of St. Sophia	Constantinople	23,000
St. John's Lateran	Rome	22,000
Cathedral of Notre Dame	Paris	21,000
Cathedral of Pisa	Pisa	13,000
Church of St. Stephen	Vienna	12,000
Church of St. Dominic	Bologna	12,000
Church of St. Peter	Bologna	11,400
Cathedral of Vienna	Vienna	11,000
Cathedral of St. Mark	Venice	7,500
Gilmore's Garden	New York	8,433
Stadt Theatre	New York	3,000
Academy of Music	Philadelphia	2,865
Theatre Carlo Felice	Genoa	2,560
Boston Theatre	Boston	2,972
Covent Garden	London	2,684
Academy of Music	New York	2,526
Music Hall	Boston	2,535
Alexander Theatre	St. Petersburg	2,332
Opera House	Munich	2,307
San Carlos Theatre	Naples	2,240
Imperial Theatre	St. Petersburg	2,160
Grand Opera	Paris	2,090
La Scala	Milan	2,113
St. Charles Theatre	New Orleans	2,178
Opera House	New Orleans	2,052
Grand Opera House	New York	1,883
Booth's Theatre	New York	1,807
McVicar's Theatre	Chicago	1,790
Ford's Opera House	Baltimore	1,720
Opera House	Berlin	1,636

Velocity of Sound and Light.

Sound moves about thirteen miles in a minute. So that if we hear a clap of thunder half a minute after the flash, we

may calculate that the charge of electricity is six and a half miles off.

In one second of time—in one beat of the pendulum of a clock—light travels over 192,000 miles. Were a cannon ball shot toward the sun, and it were to maintain full speed, it would be twenty years in reaching it—and yet light travels through this space in seven or eight minutes.

Oceans, Seas, Bays and Lakes.

Oceans.	Sq. Miles.
Pacific, about	80,000,000
Atlantic, "	40,000,000
Indian, "	20,000,000
Southern, "	10,000,000
Arctic, "	5,000,000

NOTE.—The seas, bays, gulfs, etc., connected with each ocean, are included in the foregoing estimate. It may be proper to remark, however, that the exact superficial extent of the several oceans is not known with certainty, nor the exact proportion of land and water.

Seas.	Length in Miles.
Mediterranean, about	2,000
Caribbean "	1,800
China "	1,700
Red "	1,400
Japan "	1,000
Black "	932
Caspian "	640
Baltic "	600
Okhotsk "	600
White "	450
Aral "	250

Bays.	Length in Miles
Hudson's, about	1,200
Baffin's, "	600
Chesapeake, "	250

Lakes.	Length. Miles.	Width. Miles.
Superior	380	120
Baikal	360	35
Michigan	330	60
Great Slave	300	45
Huron	250	90
Winnipeg	240	40
Erie	270	50
Athabasca	200	20
Ontario	180	40
Maracaybo	150	60
Great Bear	150	40
Ladoga	125	75
Champlain	123	12
Nicaragua	120	40
Lake of the Woods	70	25
Geneva	50	10
Constance	45	10
Cayuga	36	4
George	36	3

Value of Foreign Money.

Pound Sterling, of England	$4.84
Sovereign, "	4.84
Guinea, "	5.05
Crown, "	1.21
Shilling, "	.22
Louis d'Or, of France	4.52
Napoleon, "	3.84
Five Francs, "	.93
Franc, "	.18½
Frederic d'Or, of Prussia	3.95
Thaler, of Prussia, Saxony, etc.	.68
Florin, of Prussia, Netherlands, etc.	.40
Ducat of Austria	2.28
Rix Dollar, "	.97
Guilder, "	.48½
Doubloon, of Spain (1800)	15.54
Pistareen, "	.19½
Real, "	.05
Five Rubles, of Russia	3.95
Ruble, "	.75
Johannes, of Brazil	17.04
Moidore, "	6.56
Franc, of Belgium	.18½
Ducat, of Bavaria	2.27
Ryder, of Holland	6.04
Marc Banco, of Hamburg	.35
Franc, of Switzerland	.18½
Rix Dollar, of Saxony	.69
Ducat, of Naples	.80
Scudo of Rome	1.00½
Lira, of Lombardy	.16
Crown, of Tuscany	1.05
Livre, of Genoa	.18½
Pezzo, of Leghorn	.91
Lira, of Sardinia	.18½
Milrea, of Portugal	1.12
Two Rigsdaler, of Denmark	1.11
Doubloon, of Mexico	15.53
Tale, of China	1.48
Rupee, of India	.44¼
Ecu, of Egypt	1.10
Itzebu, of Japan	.37

How to Make a Barometer or Weather-Glass.

Take a long narrow bottle, such as an old fashioned Eau-de-Cologne bottle, and put into it two and a half drachms of camphor and eleven drachms of spirits of wine; when the camphor is dissolved, which it will readily do by slight agitation, add the following mixture:—Take water, nine drachms; nitrate of potash (saltpetre), thirty-eight grains; muriate of ammonia (sal ammoniac) thirty-eight grains. Dissolve these salts in the water prior to mixing with the camphorated spirit; then

shake the whole well together. Cork the bottle well, and wax the top, but afterwards make a very small aperture in the cork with a red-hot needle. The bottle may then be hung up, or placed in any stationary position. By observing the different appearances which the materials assume, as the weather changes, it becomes an excellent prognosticator of a coming storm or of a sunny sky. In fair weather the mixture will remain clear. On the approach of a storm it will become cloudy, and feathery particles floating about in it.

Origin of Plants.

Madder came from the East.
Celery originated in Germany.
The chestnut came from Italy.
The onion originated in Egypt.
Tobacco is a native of Virginia.
The nettle is a native of Europe.
The citron is a native of Greece.
The pine is a native of America.
Oats originated in North Africa.
The poppy originated in the East.
Rye came, originally, from Siberia.
Parsley was first known in Sardinia.
The pear and apple are from Europe.
Spinach was first cultivated in Arabia.
The sunflower was brought from Peru.
The mulberry tree originated in Persia.
The gourd is probably an Eastern plant.
The walnut and peach came from Persia.
The horse-chestnut is a native of Thibet.
The cucumber came from the East Indies.
The quince came from the island of Crete.
The radish is a native of China and Japan.
Peas are supposed to be of Egyptian origin.
The garden cress is from Egypt and the East.
Horse-radish came from the South of Europe.
The Zealand flax shows its origin by its name.

THE FARM.

Introduction.

I DID hesitate at first in responding to the invitation of the publishers of this work, when asked to make up the agricultural part thereof, because I had never done any compiling, and particularly did not care for that kind of work, but I never doubted the importance of the materials, and feeling how much we want a succinct and full manual of agriculture in these days, and willing to help in any sound education, have much pleasure in introducing this to the Canadian farmer. I can do so quite freely, for the simple reason that as the greater part of these pages is not mine, my opinion cannot be charged with egotism, nor with mercenary motives, having no business interest in its sale.

Where can I get a first-class work on farming up to date in everything? is the question asked of me by many every year, and my reply has always been, I do not know. I am aware that it is in view to meet this want shortly, by the issue of a series of Text Books, each to be confined to a special subject, under titles somewhat similar to those used by me in these chapters. Until this is done, I do not think that our young men, farmers, and the public will be satisfied. How well pleased Ontario would be were she to lead the world in this matter!

It is not claimed that this manual is either an exhaust or an Encyclopedia. The space allowed precluded this, and made, as most writers know, the boiling down much more difficult than actual original material.

But it is a sound manual on agriculture, scientific and practical. There is no spurious matter in it, and it is right up to date. The 1883 ranche, the silo, and the relation of trees to farming, for example, are, brought under review. There is also reference to some other modern phases of rural economy. The remarkable changes by present day transportation, the keen chemical enquiry and practical experiments on foot; implement revolutions and educational work; the flow of wealth and learning into land productions, and particularly the live stock interest receives a good share of the allotted space.

The form and matter will be found very handy for general reference and will not weary even the lawyer or member of parliament. Then specially, it is North American—the science and practice being weeded to apply to Canada and the Northern States.

The following works have been freely used in the compilation: "The Crops of the Farm;" "The Live Stock of the Farm;" "The Complete Grazier;" "American Farm Book;" "Wrightson's Hand Book of Agriculture;" Balfour's Botany;" "Henderson's Grasses of Great Britain and America;" "The Soil of the Farm"; and Morton on Landed Property.

W. BROWN.

AGRICULTURE:

ITS SCIENCE AND PRACTICE,

WITH SPECIAL REFERENCE TO CANADA.

The Agriculture of the Past.

IT would be interesting to know how the nations of antiquity tilled, and sowed, and reaped; what crops they cultivated, and by what method they converted them into food and raiment. Records are meagre.

Every reader of the Bible is familiar with its frequent references to Egypt as a land so rich in grain, that it not only produced abundance for its own dense population, but yielded supplies for exportation to neighbouring countries. Profane history corroborates these statements. Diodorus Siculus bears explicit testimony to the skill of the farmers of ancient Egypt. He informs us that they were acquainted with the benefits of a rotation of crops, and were skilful in adapting these to the soil and to the seasons. The ordinary annual supply of grain furnished to Rome has been estimated at 20,000,000 of bushels. From the same author, we also learn, that they fed their cattle with hay during the annual inundation, and at other times tethered them in the meadows on green clover. Their flocks were shorn twice annually (a practice common in several Asiatic countries), and their ewes yeaned twice a year. For religious as well as economical reasons, they were great rearers of poultry, and practised artificial hatching, as at the present day. The abundance or scarcity of the harvests in Egypt depended chiefly upon the height of the annual inundation. If too low, much of the land could not be sown, and scarcity or

famine ensued. On the other hand, great calamities befell the country when the river rose much above the average level. Cattle were drowned, villages destroyed, and the crops necessarily much diminished; as in such cases, many of the fields were still under water at the proper seed-time.

An Egyptian villa comprised all the conveniences of a European one of the present day. Besides a mansion with numerous apartments, there were gardens, orchards, fish-ponds, and preserves for game. Attached to it was a farm-yard, with sheds for cattle and stables for carriage horses. A steward directed the tillage operations, superintended the labourers, and kept account of the produce and expenditure. The grain was stored in vaulted chambers furnished with an opening at the top, reached by steps, into which it was emptied from sacks, and with an aperture below for removing it when required. Hand-querns, similar to our own, were used for grinding grain; but they had also a larger kind worked by oxen. In one painting in which the sowing of the grain is represented, a plough drawn by a pair of oxen goes first; next comes the sower scattering the seed from a basket; he is followed by another plough; whilst a roller, drawn by two horses yoked abreast, completes the operation. The steward stands by superintending the whole.

The Nomades of the patriarchal ages, like the Tartar, and perhaps some of the Moorish tribes of our own, whilst mainly dependent upon their flocks and herds, practised also agriculture proper. The vast tracts over which they roamed were in ordinary circumstances common to all shepherds alike. During summer they frequented the mountainous districts, and retired to the valleys to winter. Vast flocks of sheep and of goats constituted the chief wealth of the Nomades, although they also possessed animals of the ox kind. When these last were possessed in abundance, it seems to be an indication that tillage was practised. We learn that Job, whose time is by the best authorities fixed as about contemporaneous with that of Abraham, besides immense possessions in flocks and herds, had 500 yoke of oxen, which he employed in ploughing, and a "very great husbandry." Isaac, too, conjoined tillage with pastoral husbandry, and that with success, for we read that he sowed in the land Gerar, and reaped an hundred fold—a return which, it would appear, in some favoured regions, occasionally rewarded the labour of the husbandman. In the Parable of the Sower, our Lord (grafting his instructions upon the habits, scenery, and productions of Palestine) mentions an increase of thirty, sixty, and an hundred fold. Such increase, although far above the average rate, was sometimes even greatly exceeded, if we take the authority of Herodotus, Strabo and Pliny.

Along with the Babylonians, Egyptians and Romans, the Israelites are classed as one of the great agricultural nations of antiquity. Their farms were small, and cultivated with great care. They were favoured with a soil extremely fertile, which their skill and diligence kept in good condition. The stones were carefully cleared from the fields, which were also watered from canals and conduits, communicating with the brooks and streams with which the country "was well watered everywhere," and enriched by the application of manures. The seventh year's fallow prevented the exhaustion of the soil, which was further enriched by the burning of the weeds and spontaneous growth of the Sabbatical year. The crops chiefly cultivated were wheat, millet, barley, beans, and lentiles; to which it is supposed, on grounds not improbable, may be added rice and cotton. The ox and the ass were used for labour. The word "oxen," which occurs in our version of the Scriptures, as well as the Septuagint and Vulgate, denotes the species rather than the sex. As the Hebrews did not mutilate any of their animals, bulls were in common use. The quantity of land ploughed by a yoke of oxen in one day, was called a yoke or acre.

The unrivalled literature of Greece affords us little information regarding the practical details of her husbandry. With the exception of certain districts, such as Bœotia, the country was naturally unfavourable to agriculture. When we find, however, that valleys were freed from lakes and morasses by drainage, that rocky surfaces were sometimes covered with transported soil, and that they possessed excellent breeds of the domesticated animals, which were reared in vast numbers, we infer that agriculture was better understood, and more carefully practised, than the allusions to it in their literature would seem to warrant.

Amongst the ancient Romans, agriculture was highly esteemed, and pursued with earnest love and devoted attention. The words which Cicero puts into the mouth of Cato give a fine picture of the ancient Roman enthusiasm in agriculture. "I come now to the pleasures of husbandry, in which I vastly delight. They are not interrupted by old age, and they seem to me to be pursuits in which a wise man's life should be spent. The earth does not rebel against authority; it never gives back but with usury what it receives. The gains of husbandry are not what exclusively commend it. I am charmed with the nature and productive virtues of the soil. Can those old men be called unhappy who delight in the cultivation of the soil? In my opinion, there can be no happier life, not only because the tillage of the earth is salutary to all, but from the pleasure it yields. The whole establishment of a good and assiduous husbandman is stored with wealth; it abounds in pigs, in kids, in lambs, in poultry, in milk, in

cheese, in honey. Nothing can be more profitable, nothing more beautiful, than a well-cultivated farm."

In ancient Rome, each citizen received, at first, an allotment of about two English acres. After the expulsion of the kings this allotment was increased to about six acres. These small inheritances must, of course, have been cultivated by hand labour. On the increase of the Roman territory, the allotment was increased to fifty, and afterwards even to five hundred acres. Many glimpses into their methods of cultivation are found in those works of Roman authors which have survived the ravages of time. Cato speaks of irrigation, frequent tillage, and manuring, as means of fertilizing the soil. Mr. Hoskyn, from whose valuable contribution to the History of Agriculture we have drawn freely in this historic summary, quotes the following interesting passage from Pliny, commenting on Virgil:—"Our poet is of opinion that alternate fallows should be made, and that the land should rest entirely every second year. And this is, indeed, both true and profitable, provided a man have land enough to give the soil this repose. But how, if his extent be not sufficient? Let him, in that case help himself thus. Let him sow next year's wheat-crop on the field where he has just gathered his beans, vetches, or lupines, or such other crop as enriches the ground. For, indeed, it is worth notice that some crops are sown for no other purpose but as food for others, a poor practice, in my estimation."

The same Cato being asked what was the most assured profit rising out of land, made this answer: "To feed stock well." Being asked again, "what was the best," he answered, "To feed with moderation." By which answer he would seem to conclude that the most certain and sure revenue was a *low cost of production.*

It is curious, says Mr. Hoskyn, to read such passages as these, and to find the very same subjects still handled, week after week, in fresh and eager controversy in the agricultural writings and periodicals of the present day—eighteen centuries after these opinions were written.

Under the Goths, Vandals, and other barbarian conquerors, arigculture in Europe, during the middle ages, seems to have sunk into the lowest condition of neglect and contempt. We owe its revival, like that of other arts and sciences, to the Saracens of Spain, who devoted themselves to the cultivation of that conquered territory, with hereditary love for the occupation, and with the skilful application of the experience which they had gathered in other lands in which they had established their power. By them, and their successors, the Moors, agriculture was carried in Spain to

a height which perhaps has not yet been surpassed in Europe. It is said, that so early as the tenth century, the revenue of Saracenic Spain alone amounted to £6,000,000 sterling—probably as much as that of all the rest of Europe at that time. The ruins of their noble works for the irrigation of the soil, still attest their skill and industry, and put to shame the ignorance and indolence of their successors. The same remark applies to the Spanish dominions in South America. In the ancient empire of Peru, agriculture seems to have reached a high degree of perfection. The ruins of basins and canals, frequently carried through tunnels, prove their industry and skill in irrigation. One of their aqueducts is said by Mr. Prescott to have been traced by its ruins for nearly 500 miles. They cultivated the sides of mountains, by means of terraces which retained forced soil, and were skilled in the application of manure. That on which they chiefly depended was guano, and their Incas protected the penguins, by which it was deposited, by strict laws, which made it highly penal to kill one of these birds, or to set foot on the islands at breeding time. The Spaniards thus obtained possession of two good patrimonies, and have wasted them both.

The agriculture of nearly the whole of the continent of Europe has made very great progress since. In Flanders, the Netherlands, Switzerland, and Germany, there are certain limited districts which, in general management, rival, and in particular points excel, our own. In nothing is this more apparent than in their scrupulous economy of manure, both as regards its preparation and application. In Flanders, not only the contents of privies, but soap-suds, scullery-water, and slops of every kind containing fertilizing matters, are carefully preserved in suitable receptacles, by the town's folk and villages, from whom they are purchased by regular manure dealers, who come steadily round with their tub-carts to collect this sewage, store it in tanks, and in due time retail it to the farmers. The latter invariably have tanks of their own, in which the urine of their cattle and similar matters are collected. This liquid manure is frequently enriched by the addition of night-soil and rape-dust, and is always stored for several months before being applied to the land. In South-West Germany, Switzerland and Holland, the same attention is paid to the preparation of liquid manure, by mingling the dung and urine of the cattle with water, fermenting it in tanks, and then in distributing it over green crops by means of barrel-carts. The following might stand for a description of Myre Mill, or Tiptree, but for the want of the steam-engine, force-pump, and underground pipes: "The cows often lie on smooth bricks, which are washed clean twice a day, for which purpose a

pump is an essential appendage to a cow-house. There is generally a deep gutter along the wall behind the cows, into which the water and urine drain, the ground sloping gently towards it. The tank is either immediately under the stable, well vaulted over, or it is so near that all the liquid readily runs into it through a covered drain. The heads of the cows are towards the middle of the stable, and their tails over the gutter along the wall. The width of the building admits of two rows of cows facing each other, with a space between them sufficiently wide to admit a small cart to bring the food to them. This is universally the form of a cow-house in Holland. The liquid in the tank is allowed to go through the first stages of fermentation, during which the caustic portion of the urine is rendered mild, and the liquid is better fitted to be taken up by the fibres of the roots. In order that there may be a regular succession of liquid in a proper state for use, there are partitions in the tanks, and by means of small flood-gates in the drain which leads to it, the fresh accumulation may be directed to any one of the pits thus formed, while the ripe liquor may be pumped up into tubs or barrels set on wheels, to be conveyed to the land. There are means of accelerating or retarding the fermentation, according to the time when the liquor is wanted. Stirring and admitting the air assist the process, while the addition of earth, peat, or ashes, and keeping out the air retard it. The efficacy of the liquid is much increased by adding rape-cake, and other vegetable substances. This is usually done a short time before it is put on the land, as it would otherwise ferment too much."

But it is in the irrigated districts of Piedmont and Lombardy that a style of farming is to be found admirable in itself, and especially fitted to interest and instruct the American farmer. For not only do we find there the oldest, the most extensive, but the most thoroughly elaborate system of irrigation to be met with in Europe.

Of the Agriculture of the Britons before the Roman invasion we have no certain record. Originally savages—subsisting upon chance products of the field or the forest, the roots and the nuts, and the flesh of animals—what little they knew of agriculture during a period of a century or so prior to the Roman invasion was probably imparted to them by those who, emigrating, as tradition hath it, from Gaul, established colonies on the British sea-coast, and brought with them some knowledge of farm produce.

Diodorus Siculus mentions that the ancient inhabitants of Britain used subterranean apartments in which they kept their grain, these being con-

structed of stones rudely placed together. Strabo even writes of their flocks and herds; and Cæsar notes that the cattle were in abundance.

That most of the pastures of England have, in former times, been under tillage, will be seen by every one practised in agriculture who examines the ridges, furrows, banks, roadways, landmarks, cuttings, &c., still to be found upon them. In many instances, the carefully rounded lands, the highly raised headlands, the large amount of soil worked from higher to lower ground, and the marks of cultivation terminating at points where occasional floods limited the application of the ground to the growth of grain, are unmistakable evidences of the plough having for ages been at work, and the former application of the land to growing grain.

Be all this as it may, whatever improvement agriculture had made from the time of the Roman invasion till the conquest of the country by the Anglo-Saxons, that improvement was not sustained during the period when the conquerors held the sway. Fond of the chase, the Anglo-Saxons despised the arts of tillage, and deemed them at best the fitting employment of slaves and women. The Britons gradually sunk, therefore, into a depressed condition; and with it came the loss of the knowledge of farming, as taught them by, or obtained chiefly from, an intercourse with the Romans. Some idea of their wretched condition may be derived from the fact that associations were formed to enable a yoke of oxen and a plough to be kept for the united benefit of the members. At this period it was enacted that "no man should undertake to guide a plough who could not *make one;* and that the driver should make the ropes of twisted willows with which it was drawn.

Nor was the state of matters improved, and the condition of the husbandman much ameliorated, by the change of masters which took place in the Norman Invasion and Conquest; on the contrary, they were rendered much worse. Large tracts of land which bore comparatively good crops of grain, were on various pretences laid waste, and converted into forests and hunting grounds.

Yet it must not be supposed that the Normans brought with them nothing but the art of oppression, and the love of war and the chase, Many of them were well acquainted with farming, and had brought with them the knowledge of its practice.

Large tracts of tidal lands were reclaimed under their superintendence; moors and marshy lands were taken in by them; and while the soil, thus wrested from barrenness, was made to yield its produce, that of the cultivated lands of old was greatly increased by their painstaking care.

Of the system of culture in use, it is difficult to form a true conception. Farm-yard dung was the main manure used, although marl seemed to have been in repute. Summer fallowing for wheat was also practised; and the operations of harrowing, reaping, and threshing, closely resembled our own.

From the end of the fifteenth to the middle of the seventeenth century, peace fortunately prevailed in England; and although much progress was not made in agriculture, still it displayed, in common with other arts, the advantage of the peace. The art of printing gave to agriculture, as it also gave to the other arts and sciences, a wonderful impetus. Works began to be published containing records of farm practice, and rules for its guidance, as well as epitomes of the methods pursued by the ancient nations. During the reign of Elizabeth, agriculture greatly flourished; large tracts of forest and common land were taken under the plough, and those which had been under cultivation were improved.

It was towards the middle, or perhaps more correctly towards the end, of the eighteenth century, that the value of the alternate mode of husbandry began to be appreciated, in which alternate crops of cereals and grain crops were taken from the land, the latter enabling larger supplies of cattle to be maintained, and, by consequence, larger supplies of manure to make up for the exhaustion of the land by the cereal or grain crops. Drainage also began to be practised on a larger scale, and on more scientific principles. Several new crops were added to the list of those formerly at the service of the farmer, as, for instance, the potato (about 1750)—previously cultivated in gardens—the Swede turnip (about 1790), the mangold-wurzel, and the spring variety of wheat (about 1795). In 1760 Bakewell began his celebrated experiments on the improvement of stock, which resulted in completely changing their character—more especially that of sheep—and rendering them of far greater value for breeding and feeding purposes. In 1777 the "Bath and West of England Society" was instituted, having for its special purpose the improvement of agriculture. In 1784 the institution of the Highland Society followed; and in 1793 the Board of Agriculture was formed by the legislature, and placed under the control of the celebrated Sir John Sinclair.

Of the condition of Scottish agriculture in very early times, history has left little or no record. But as in England, so in Scotland, agriculture and horticulture owed much to the exertions of the monks and the religious communities. Of the progress agriculture, in Scotland, made during the seventeenth century, we have no correct means of knowing. Ray, who visited its eastern coast in 1660, mentions that he saw little or no fallow

ground; some layland he noticed, which was manured with sea-weed barley and oats he saw, but little wheat and rye; and of the condition of the peasantry, and of their industrious habits, he seemed to have formed a low opinion.

Although the condition of agriculture in Scotland, in early times, was very depressed, judging from some enactments of the parliament of Alexander II., still some idea of correct cultivation of the soil must have been prevalent, from the enactment of a severe law against those who allowed a *pernicious weed to grow in their fields.* In the fifteenth and sixteenth centuries, oats and barley were the principal crops grown, although wheat seems to have been cultivated as early as the thirteenth century. One authority states that at this period "the peasants neither enclosed nor planted, nor endeavoured to ameliorate the sterility of the soil."

At the period of the Revolution, agriculture was in very low condition in Scotland, so much so that many farms were unoccupied, and landowners were as eager to get tenants as the tenants now are to get landowners to let them their farms. The union of Scotland with England gave rise to a gradual and steady improvement. In 1723 the Society for Improvement in the Knowledge of Agriculture in Scotland was established; and in East Lothian great exertions were made by patriotic gentlemen there resident to improve the state of cultivation. "The practice of drainage, enclosing, summer fallowing, sowing flax, hemp, rape, turnip, and grass seeds; planting cabbages after, and potatoes with, the plough, in fields of great extent, is introduced." Summer fallowing, mentioned in the above extract, was not introduced in Scotland till about this period, although in use in England from the time of the Saxons and Normans. From this period agriculture rapidly improved, till the farming of Scotland took that remarkably high position for which it is now so famous.

Little can be said of the early history of the agriculture of Ireland; for little information, save of a purely conjectural character, is at hand. From the peculiarity of the climate, which is humid, and the nature of the soil, a rich loam upon limestone, Ireland has chiefly been a pastoral and grazing country, tillage or husbandry has, therefore, been little attended to up to a comparatively recent period. And what husbandry has been practised was of the highest order, on account chiefly of the small-farm system, which may be said to have been the rule for many years, if it is not even still the rule.

The Agriculture of To-day in North America.

OUR position in the world's main industry is assuming several marked features. In the first place we are no longer a dismembered country, and unbound by modern highways; the great civilizer of all nations, the railway, has brought the Atlantic and Pacific within six days of each other, so that produce at the foot of the Rocky Mountains can fairly compete with that at Victoria, B. Columbia, at Chicago, Montreal, and at Halifax. Of all revolutions, this is the most wonderful and far-reaching in commercial significance.

Next in importance is the application of machinery. What will follow the self-reaper and binder, imagination can hardly picture, but this of itself is destined to place our sons at least on such independent ground as even the manufacturers fail to estimate. It is not to be a Dalrymple farm only that shall command their service, but even the ordinary farmer of Ontario will walk out in the morning and return in the evening of one day, after having cut and bound his fifteen or twenty acres with *one man and two horses*. What a great cause there is in this for extensive possession of landed property on the part of individuals, and possibly with the tendency to a lazier, a less systematic, and a less remunerative system of cropping.

Then, again, we are gradually drifting into a recognition of the claims of agriculture as a part of national education. Its absence until recently in nearly all systems of public education, anywhere, has been a curious inconsistency, difficult to explain by men outside, and yet simple when put to the men most interested. In conjunction with improved machinery, and special lines of produce, the education of the farm will hold the leading men of advanced nations, as it did two thousand years ago.

Thus, then, another phase of to-day farming is the keen scientific enquiry into things either not yet known, or so simple in themselves as to bear doubt, and consequently requiring investigation. Fertilizers and animal foods are examples of these; their simplicity is in the hands of the practical farmer, their complicated workings with the scientist, who is

not satisfied with bare facts, and his indications must follow the other's every day lessons, which are so varied by climate, soil, plants and management, that the association of science and practice must continue one of unending interest and practical value.

We do not agree with those who denounce the multiplication of agricultural exhibitions. Were they made less sectional than they are now, the under-average farmer would be the longer in rising, and the country correspondingly kept back. Exhibition lessons are not necessarily immediate in their effect, nor are they always remunerative for the time being. Educational work otherwise for the farm is precisely of the same character with exhibitions, and nobody will deny that the school, the college, the press, and books, are too plentiful. Exhibitions are a peculiar feature of Canadian agriculture, and it is well we should think twice ere denouncing their multiplication.

The sequence of the preceding paragraph should be first class agricultural literature as another mark of the times, but it is not so, and the reason is not far to seek. We are too young, not wealthy enough, and still too busy, to employ the best talent in agricultural literature. The Americans are far ahead of us in this respect, as they are actually of Britain in some lines of the profession.

Neither are we on a par with our neighbours in associations for diffusion of agricultural knowledge. The origination of Societies, Clubs, and Associations is peculiarly American in its diffuseness, but when the day comes that we take the lesson, let us add *continuance* to the virtue.

And again, one of the great agricultural phenomena of to-day with us, is patriarchal grazing of cattle. Under all the irregular and overheated speculation of the pioneers in this trade, our North-West ranches will come out refined and well marked. If winter conditions are unfavourable to continuous occupation, the summer by itself will suffice to make rich, and the coming and going that may be necessary will add to employment and a stricter system of jurisdiction, in which we are of opinion mutton and wool will take a large place.

Finally, in those confined notes, the prominent agriculture of to-day in North America is making more prominent the unapprehended resources of the country. Not only in arable culture, but certainly in actual letting alone of nature's gifts in the form of grass, are we loosing ourselves: has it not been so in Manitoba, is it not so in the Eastern provinces, and are we taking all we should take at our own doors in Ontario? The greed for land is well in respect of domination, but unwise as regards stern bottom, worth and solidity.

The Soil of the Farm.

IN order to understand the nature of soils thoroughly, some knowledge of geology, mineralogy, chemistry, and physics, is necessary. Geology and mineralogy teach the origin, chemistry and physics, the composition and functions of soils; and when these aspects have been studied, *climate* and all *surrounding conditions* must be taken into account before we can be in possession of full information.

The subject may be usefully divided into the following sections: (1) ORIGIN, (2) FORMATION, (3) DISTRIBUTION, (4) PHYSICAL PROPERTIES AND SURROUNDING CONDITIONS, (5) CLASSIFICATION.

1. ORIGIN OF SOILS.

As a primary fact, it may be stated that the entire mineral matter of soils has been derived from the gradual decay or disintegration of rocks. It is usual to state that soils are derived from the decay of the *crystalline* (primitive) rocks, because from them all intermediate and newer rocks have been derived.

This decay has been effected during the lapse of long ages, by means of natural forces still in active operation, as may be seen in the crumbling of building stones, and that "weathering" which gradually changes the hardest rock into a powdery mass. Changes of *temperature*, operating with *water*, in the many forms assumed by that element, the action of the *atmosphere* and *vegetation*, are the chief causes of decay; and to these may be added *volcanic action*, which, as is well known, is the cause of the rapid formation of new and fertile lava soils.

In dry climates, where rain seldom falls, inscriptions upon stones retain their freshness for thousands of years, thereby proving the extreme durability of certain rocks when favourably situated. On the other hand, in a humid atmosphere, decay progresses much faster, as may be noticed in the crumbling condition of ruins, and even more recent buildings. During certain geological epochs, the surface of our planet has been exposed to conditions of heat and moisture highly favourable to the decay of rocks; and under those conditions, thick beds of granite, yielding to the in-

fluences brought to bear upon them, have been converted into sand and clay.

2. Formation of Soils.

Bearing in mind what has been already advanced with reference to the general origin of soils, we have next to inquire somewhat more minutely into the processes which have at length resulted in their formation. The first destructive or disintegrating element which operates upon a rock is THE ATMOSPHERE, which is brought into closer contact with the rocky particles through the agency of moisture, in the form of snow, rain, dew or mist. Through one or all of these forms of water, carbon dioxide is dissolved from the air which contains it, in the proportion of 4 in 10,000 parts. Thus the rock is brought into constant contact with a dilute solution of carbon dioxide in water. The action of this solution is slow, but irresistible when allowed to proceed through long periods of time; and under its action the hardest rocks, such as granite for example, yield up their alkalies and some silica, the felspar loses its cohesion and falls into a soft powder (clay), while the quartzose constituents are left in the form of sand.

CHANGES OF TEMPERATURE.—The foregoing effect is further expedited by changes of temperature, and especially by frost. Water expands as it freezes, and when water lodges in the interstices or pores of a porous rock, it suddenly expands as it congeals, and the consequence is a disruption of particles that speedily shows itself in the crumbling character of the rocky surface.

VEGETATION.—As these forces proceed, a superficial layer of variable thickness is produced, and at an early stage vegetation exerts its sway. Lichens are seen growing upon walls and the faces of quarries, and mosses and grasses follow at a later stage, and occupy the most unpromising situations. The effect is to increase moisture and to accumulate vegetable matter or humus, which again gives rise to carbonic dioxide, and renders the rain still more potent in its dissolving and disintegrating action. The roots of plants also, no doubt, themselves exert a dissolving effect. Thus gradually a soil is formed, and it will be noticed that, in this case, it is formed *in situ*, or upon the rock from which it was derived.

The forces still to notice differ from those already enumerated in their transporting effects, which, when added to their disintegrating action, render them not only accountable for the origin, but the present position of many soils.

Action of Running Water.—Particles of sand or clay once detached from the parent rock are quickly carried away by the action of running water, and as these runnels gain strength and converge into mountain streams and torrents, a new manifestation of the power of water is exhibited in the wearing and undermining action which they invariably display. The attention of tourists on the Alps is often called to deep gorges, at the bottom of which is heard the gurgling of the stream. The wearing or cutting action is to be unmistakably traced through the compact rock from the top to the bottom of this gorge, in the water-worn hollows where the stream has evidently eddied and whirled at some remote period, sixty or eighty feet above its present bed.

Action of Rivers.—Mountain streams converge into rivers, which carry with them the mineral *debris* of the mountains, and distribute it over the plains beneath. All large rivers flow, during a portion of their course, through fertile alluvial plains; and further study shows that these plains have been deposited by the river itself, and are in fact composed of the mud brought from the higher grounds to be deposited at a lower level. As rivers widen towards their estuaries, they often deposit still more extensive tracts of "alluvium," or mud.

The Ganges in India, and the Mississippi in North America, both afford remarkable instances of the power exercised by rivers in altering the distribution of sea and land. In the latter case, the mud, vegetable matter, and timber, brought down and deposited at or near the mouth of the river, is rapidly filling up the Gulf of Orleans. It is difficult to draw a distinction between the action of the sea and the action of the river in many of these cases, but both agents act in determining the direction of deposition.

Action of the Ocean.—Almost at any part of the coast traces of the perpetual struggle between sea and land may be seen.

Action of Ice.—The expansive force of freezing water as a means of breaking down rocks has been already noticed. Ice and frost also play an important part in the formation of soils upon a large scale. The grinding action of glaciers upon the sides of the ravines through which they slowly descend—for a glacier is not stationary, but is actually a river of ice—results in glacial mud, which, as the ice melts at the lower extremity, is carried down by the stream that perpetually runs from the glacier. These streams are rendered milky or turbid by suspended matter, and it is only when they reach the level land at the base of the mountain that they deposit their burden in the form of alluvial soil. In many cases it is carried

into a lake, and sinking to the bottom, continues a process which, in the course of time, will gradually convert the lake itself into an alluvial tract.

Volcanic Action.—It is well known that lava slowly crumbles into a fine fertile clay. The flanks of Vesuvius and Ætna are clothed with vineyards and olive gardens, and the effects of volcanic action are observable in certain parts of our own country, where the active cause has long ceased to operate. The formation of a soil from lava is effected, first by the rapid cooling of the surface of the molten stream, which speedily cracks into a cindery or scoriaceous porous mass, and this gradually yields to the influences of moisture and changes of temperature, and forms a soil.

Peat.—There still remains a process by which a considerable class of soils has been formed, differing very widely from those which have been described. It is that of vegetation or growth. All peats have grown, and their history is sometimes traceable from its commencement. Peat soils occur only in moderate and high latitudes, but form an important class of cultivated soils in some countries, a very large proportion of Ireland—that country containing 2,800,000 acres of peat,—and large tracts in France, Germany, Russia, and all north European countries. Peats frequently rest upon clay, and the history of their formation will be usually found to have been a modification of the following typical account.

A forest or tract of brushwood is overblown or levelled by some severe wind or flood. The consequence is an interruption of the natural drainage of the locality, and the inducement of a wet and spongy condition of soil favourable to the growth of many species of *sphagnum*. These plants have the property of throwing up new shoots while the lower extremities are decaying. Peaty matter also appears to be precipitated from water at the freezing point, when organic matter held in solution falls to the bottom.

Indigenous (Sedentary) and Transported Soils.—We are now able to divide all soils into two great classes. First, those which may be said to be *in situ*, or to remain in the position where they were originally formed. As an example, take the thin white soils of the Upper Chalk which correspond closely in character with the compact chalk rock beneath. They are white, abound in flint stones, and evidently belong to the Chalk, and are properly termed chalk soils. So also the clays of the Lias, of the Weald, and of the Oxford clay, the red soils of the New and Old Red Sandstone, and the "brashy" light soils of the Lower Oolite, all partake of the nature of the underlying rock, and are distinctly influenced

by it. A large proportion of the soils of Great Britain are thus INDIGENOUS or SEDENTARY, and rest upon the parent rock. Hence an important connection is at once evident between the geology and the agriculture of that country. The student is able to a certain extent to predicate the general character of a soil when he knows the main geological features of the district.

On the other hand, we cannot fail to observe that over large tracts the surface soil does not present any similarity of appearance or character when compared with the underlying rock. Here the surface soil has been TRANSPORTED from a distance. Sometimes it is superior in quality to what we might have expected, and in that case it is probably alluvial matter deposited by some river in its course or at its estuary; and there are cases in which the river that deposited those fertile plains has long ceased to flow. Or we may be standing upon an old lava field which covers and renders fertile an area that would otherwise have been comparatively barren.

At other times the soil is of lower quality than we thought to find, and in such cases its poverty may be due to the growth of peat or the accumulation of "drift." "Drifted" material masks, or covers, many localities in Ontario and other countries, giving a poorer soil than the underlying and masked rock would have yielded.

There are then two great classes of soils, the first bearing the stamp of its origin, and exhibiting a close relationship to the underlying rock, from which, indeed, it was formed. In studying these soils, the main geological features of the country are exceedingly useful guides.

The second class comprises all alluvial, drifted, lava, and peaty soils, which, having been deposited, spread, or, in the last case, produced upon the spot at a later period, do not exhibit any correspondence with the main geological features of the district in which they occur. In these, minute geological study is requisite if we wish to trace their origin.

3. Distribution of Soils.

The bearings of geology upon agriculture are abundantly illustrated in the distribution of soils. It would be irrelevant to our subject to enter into the geological aspect of this subject at great length. The student who wishes to do so will find it necessary to study geology. It will, however, greatly assist him to grasp the plan of soil distribution if he keeps in memory the order of succession of the main beds or formations which constitute the explored crust of the earth.

The importance of this fact to the agriculturist is at once apparent, when we find that each *stratum in turn* occupies the *surface of the country*. It is the constant order of succession which makes the arrangement of the various formations of practical use to the land-valuer or the agriculturist.

Some geological formations yield soils of high average fertility, while others yield inferior soils. Some are stiff and expensive to work, while others are generally free working. It must, however, be remembered that geological knowledge, although useful, is not entirely to be relied upon. On all formations, good, bad, and indifferent soils are no doubt to be met with. The mingling of formations together at their edges, accumulation of drifted matter, the occurrence of less important strata, unnoticed perhaps in the geological chart, and other reasons, create numerous exceptions to any rule which may be laid down with respect to the soils of a certain geological formation. The subject is full of interest, and deserves a longer notice than we can at present afford it.

4. Physical Properties of Soils, and Surrounding Conditions.

The Proximate Constituents of Soils.—Soils differ widely from each other in their physical properties. Some are wet and consequently cold; others are warm and dry; some are easily worked, while others are exceedingly tough; some are easily burnt up by drought, while others maintain a thriving herbage through the most trying seasons. The physical nature of a soil depends upon the proportion in which its proximate constituents are blended. All soils are composed of five proximate ingredients; namely: (1) Sand, (2) Clay, (3) Lime, (4) Vegetable matter, (5) Mineral fragments (stones). Whether derived from the decay of chalk or sandstone, it will be found that all fertile soils are thus constituted, and the kind and quality of the soil depends to a great extent upon the proportion in which these materials are mixed together. A short account of these familiar substances becomes therefore very necessary if we are to arrive at a sound conclusion regarding the nature of soils.

Sand may be either calcareous, micaceous, or silicious. A calcareous sand simply means a sand in which particles of lime, it may be shells or chalk, abound. Many sea sands are of this nature and may be applied to land as a source of lime. Pure sand is, however, free from lime, and consists almost exclusively of small grains of silicic acid (quartz). It is seen in its purest form as silver sand, and is accumulated in quantities wherever it is separated from earthy matter by the action of water. It is

insoluble in water and acids, and fuses into a vitreous mass when subjected to a white heat.

Sand quickly dries, and possesses no power to absorb moisture from a damp atmosphere. A cubic foot of sand has been found able to hold 27 lbs. of water as a sponge, *i.e.*, without dripping. Its retentive power towards heat renders it useful in the chemical laboratory as a "sand bath," when it is required to keep up a uniform dry heat. Its insoluble, intractable and simple or elementary characters render it unfit to support plant life. It cannot be said to be in any sense a plant food, but it acts as a divider or opener of the land. It facilitates the percolation of water through the soil; renders the passage of roots in search of food more easy; confers a degree of warmth on soils first by drying them, and secondly from its inherent power of retaining warmth; and renders the soil easy of tillage. All soils contain sand, and its greater or less predominance is used as a means of classifying them.

Clay.—The purest forms are china or porcelain and pipe clays. In the first forms it is found in vast quantities, and becomes the basis of the manufacture of the finest white wares. It is plastic in its character, and to this property it owes its value as a material for making bricks and pottery. The minute particles which form clay have been observed to be crystalline in structure.

When dry it may be reduced to an impalpable powder. When moistened it emits the characteristic argillaceous odour, and becomes highly plastic. When subjected to a low red heat it loses its plasticity, and becomes permanently hard and brittle—a fact of great importance not only in the arts but in agriculture. Clay is naturally colder than sand. In chemical language clay is hydrated *aluminium silicate*, but in nature it is almost invariably associated with potash, soda, lime, ferric oxide, magnesia, and carbon dioxide.

These impurities render clay much more valuable as a constituent of soils than if it were pure. It is in consequence of their presence that a clay soil is very often rich, and that clay ranks among the most important constituents of soils. Pure clay would be as little able to support vegetation as pure sand, but when associated with sand, native or impure clay yields a fertile soil. The special functions it performs in a soil are, first, the maintenance of fertility by the introduction of valuable mineral food constituents; secondly, clay gives "body" to a soil, by which is meant a certain consistency favourable to the retention of moisture; and coolness which enables a soil to resist drought.

LIME is widely distributed, and occurs in vast quantities. The chalk hills which sweep through England are almost pure lime. The Lower Oolite consists largely of lime, and the magnesian and mountain limestones occupy large areas of several counties. Lime is also found in the form of marls and marbles in many other geological formations, so that it is available for agricultural purposes in nearly all localities. It is employed as a manure in the forms of chalk, marl, and burnt lime, and its application and uses will occupy us when we consider the subject of manures. At present it appears before us as a constituent part of all fertile soils, and its wide distribution is illustrated by the fact that it invariably occurs in such soils in greater or less proportions. Although spoken of as "lime" by the farmer, it is more correctly described as calcium carbonate (carbonate of lime). The carbon dioxide is readily displaced, and flies off with brisk effervescence when any stronger acid is applied. Pure calcium carbonate is found in nature in the forms of Iceland spar, white marble, and chalk. When exposed to a red heat it parts with its carbon dioxide and water, and when cool it is found to be porous in texture, and to exhibit an avidity for moisture and carbon dioxide, which renders it caustic. It reabsorbs the water, and to a limited extent the carbon dioxide from the atmosphere, and as it does so "slakes" or "falls" into a mild powdery mass. If water is poured over the calcined lime, the slaking is more rapid, and accompanied by the evolution of much sensible heat. The characteristic colour of lime is white—that of the Magnesian, such as that at Guelph, Ontario, having a yellow tinge. It is intermediate between sand and clay in tenacity and in its power of holding water.

Lime is an important constituent of all fertile soils. It is in itself a plant food, and a valuable manure. It exerts a strong effect upon decaying vegetable matter by accelerating its resolution into carbon dioxide, ammonia, and water; it also combines with vegetable acids, and forms with them neutral lime-salts, no longer injurious to vegetation. It plays an important part towards the mineral matter of the soil, by decomposing the silicates and setting free their alkalies. Lime acts mechanically by improving the texture of clay soils, and being of intermediate tenacity, it is also able to confer a higher degree of consistency upon light soils. Like clay, lime owes its agricultural value in a great degree to its impurities. Magnesian limestone, as its name implies, contains from 36 to 40 per cent. of magnesium carbonate, and about, or above, 50 per cent. of calcium carbonate. The limestones which form the Chalk, and the formations of mountain and oolitic limestones, are chiefly composed of the latter salt; but associated with it there occur ferric oxide, phosphorus pentoxide, cal-

cium sulphate, silicia, water, and a trace of organic matter. Thus clay and native limestone will be seen to contain most of the elementary substances which enter into the composition of the ash of plants.

Vegetable Matter has accumulated in all cultivated soils, and in the form of peat it sometimes composes the entire mass. It is to the presence of humus or vegetable matter that the rich brown colour of good land is due, It may be described as a dark-brown, soft, porous, substance, seen in the greatest purity in the form of well-rotted wood or leaf-mould. It is constantly in a state of decay or slow combustion, which is never completely arrested until it is reduced to the condition of pure carbon. The earlier agricultural chemists attributed a greater importance to this constituent of soils than is at present assigned to it. It was observed that all garden soils and fertile loams were rich in vegetation matter, and the inference was drawn that it was the cause of fertility. The late Baron Liebig, in his work on Agricultural Chemistry, published in 1840, demolished this theory by showing that humus was not the cause, but rather an inevitable consequence of richness. A rich soil, suitable for the growth of plants, cannot fail to accumulate vegetable matter by the fall of the leaf and the death of root fibres. A soil may be rich without humus, as is proved by the fertility of lava soils. The more a soil produces, the greater will be its stock of humus, as for example, in the case of a crop of mangel or swedes, or in the case of a hay or straw crop, the accumulation of roots in the soil leaves it positively richer in humus than it originally was, in spite of the many tons per acre of produce removed in the root crops. Land adapted for the growth of timber will yield many tons per acre of wood in the course of years, and yet the soil will be positively better stored with organic matter or humus at the end of the period than it was at the commencement. This can only be explained on the ground that the carbon, hydrogen, and nitrogen, which constitute humus, are derived from the air and not from the soil. Although useful, it is therefore seen to be less essential than any of the proximate constituents yet noticed.

Humus is not assimilated directly by flowering plants. It is valuable as a perpetual source of carbon dioxide, and in a less degree as a source of nitrogen. The gradual decay of humus maintains the interstitial atmosphere, rich in carbon dioxide, and impregnates the rain which penetrates the soil with the same ingredient. It is in this manner that humus becomes useful in the nutrition of plants, and at the same time assists in that slow digestion which liberates insoluble matter from the soil, and renders it fit for the use of the plant. Humus is also highly valuable in

modifying the texture of land. Without it a soil would be light in colour —powdery, dry, and harsh to the touch. With it it becomes brown in colour, cool, moist, and mellow, and in every way better fitted for the growth of plants.

Mineral Fragments (Stones).—Although stones might at first sight appear rather as intruders than as legitimate constituents of a soil, their constant occurrence and important uses lead us to consider them in the latter light. Their precise nature will depend upon the origin of the soil. Thus in an alluvial deposit or drifted soil we expect to find water-worn round pebbles; in an oolitic limestone, irregular fragments ploughed up from the rock beneath, and in a chalk soil we expect to find flints. They always modify the character of land when they occur in large numbers. Many soils now worked as light land would be unworkable clays were they not lightened up and divided by countless stones. It is also important to bear in mind that stones may be regarded as undecayed fragments of the original rock from which the soil itself was derived. They are of all sizes, down to minute chips and particles, and especially must these smaller particles yield up fresh mineral food for plants under the influences of frost, warmth, and moisture. A time must come in which even the largest will crumble down, and hence we may regard the mineral fragments as a magazine of mineral plant food.

A soil is then no mere mass of powdered rock, but a complex substance, the product of various forces, acting through long cycles, and modified by the growth of plants, and the decay of both vegetable and animal matter. Soils may be spoken of as the graveyard of countless generations of animated nature; as stocked with plant food at once available, and fortified with further as yet unprepared material, forthcoming when required.

In the language of a respected authority, it may be spoken of as a *laboratory*, in which beneficial changes are ever taking place, a *vehicle* by which plant food finds its way to the root fibres of growing vegetation, and a *storehouse* of present and future plant food.

The physical properties of soils will be modified according to the proportions in which sand, clay, lime, vegetable matters, and mineral fragments enter into their composition.

In order to possess fertility in the highest degree, a soil must afford easy access and egress to superfluous water, but at the same time must possess sufficient retentive power to guard against protracted drought; its texture must be at once firm and yielding, so as to afford protection to root fibres, while it allows of their free passage in search of nutriment; it should be

well stocked with available plant food; and so situated with reference to subsoil and climate as to insure the realization of the above good qualities.

Porosity.—A fertile soil must be porous, *i.e.*, the particles which compose it must not be too near together, but allow room for an interstitial atmosphere, the free percolation and retention of water, and for the condensation of valuable fertilising matters upon the interstitial surfaces.

The porosity of soils is an exceedingly interesting subject. It occupied the attention of Jethro Tull early in the last century, and it afforded a fertile theme for investigation to the late Sir H. Thompson, of Kirby, and subsequently to the late Baron Liebig, Professors Way and Voelcker, Sir J. B. Lawes, and other chemists. The porosity of a soil may be measured by the fineness of its particles. A coarse-grained sand, although more open in its texture, is in reality less porous than a finely-grained clay. It has *fewer* pores. Every time we break a fragment of any substance we increase the extent of its superficies, and this is practically true *ad infinitum;* so that an impalpable powder presents the largest possible surface, and is in a condition of maximum porosity. Our most porous soils are therefore our clays, a statement that is capable of satisfactory demonstration, although the use of the word in this connection would scarcely be accepted by agriculturists, who speak of sands as porous, in opposition to clays, which are spoken of as retentive soils.

The porosity of soils explains some of their most interesting physical functions. It is owing to this property that they are able to retain sufficient moisture for the use of growing vegetables. It is also owing to the same property, assisted by others, that soils are able to appropriate and hold certain valuable fertilizing matters with sufficient strength to overcome the tendency of the rainfall to wash them beyond the reach of plants. That these important functions are possessed in the highest degree by clay soils, is sufficient proof that these soils possess the highest degree of porosity.

Capillarity.—This property also depends upon porosity. It is observable that when a fluid is admitted between very closely contiguous surfaces, such as two plates of glass held almost touching, and dipped into water, the fluid will be seen to rise between the plates to a considerably higher level than its own. Lump-sugar and blotting-paper dipped into water are familiar examples of the same force; and a lump of clay, if immersed in a saucer of water, will become wet to its summit from the same cause. The finer the interstitial spaces, the higher will the fluid ascend; and hence we find that a column of finely-powdered clay will become wet thirty-six inches above the surface of the water into which its base is

dipped. Sand very quickly causes water to rise, but not higher than about twenty to twenty-three inches. Loamy soils will lift water by capillary attraction thirty-five or thirty-six inches; and lastly, clay broken into fragments as large as split-peas, only raises water 5.7, 9.5, and 12 inches high.

Capillarity is constantly exerted by soils, and the fact that it is continued from the deeper layers towards the surface during frost, accounts for the plashy condition of paths and roads when the thaw sets in. This subject will once more occupy us when we consider land drainage.

Influence of Porosity upon Fertility.—The influence of porosity upon the fertility of soils has already been alluded to. It has been long known that soil possesses strong deodorising power, and it can easily be shown to decolourise solutions and to transmit a colourless and odourless filtrate. Liquid manure, when filtered through a certain depth of earth, becomes thoroughly purified. It is this property of soil which makes it available for the purification of sewage, and in this case it is assisted by the oxidising influence of the air. After running over and through a sufficient area and section of land, sewage will be found to be perfectly colourless, and to have lost its offensive odour.

Further, it has been demonstrated by Professor Way and others, that watery solutions of ammonia, potash, salts and soluble phosphates, when filtered through ordinary soils, are robbed of almost the whole of these substances. They are held back by the soil in a state of physical or physico-chemical combination; and although capable of being once more partially detached by the copious use of pure water, they are to a great extent permanently retained by the soil.

Thus the three most important fertilizers are found to be specially attracted to and held by the soil, a fact which bears upon the best means of applying such substances to the land.

This peculiar power seems to be due to a somewhat obscure adhesive force. It has been compared to the decolourising action of animal charcoal upon sugar, and also to the curious manifestation of adhesion or surface-attraction seen in dyeing. In this process particles of colouring matter are removed from solution or suspension, and become firmly fixed to the fabric, a common but not easily explainable phenomenon. In some such way the soil seems to remove colouring matter, smell, and even salts in solution from water, and to fix them in its pores or interstices.

It is also now certain that, as the forces already noticed detach fresh particles in a soluble form from the intractable and insoluble mass of the soil, that these particles will be fixed at once by the surface-attraction

under consideration, and held safely for the use of plants. Thus available plant food accumulates in a fallow field or permanent pasture, and the ground becomes richer by rest.

Active and Dormant Constituents of Soils.—The preceding section will have shown that in every soil the material from which the tissues of plants may eventually be elaborated, exists in two physical conditions. First, there is the mass of earthy matter which has already been seen to consist of sand, clay, lime, vegetable matter, and stones; with the exception of lime none of these substances are taken up by the roots of plants. But associated with them in much smaller quantities are a number of substances which constitute the active ingredients of a soil. Of these last a small portion is already soluble and available, and a larger quantity is insoluble, and therefore for the present unavailable.

The mass of soil may be regarded as the hunting-ground in which the roots of plants ramify and search for food; also as a suitable material for preserving proper conditions relating to moisture and to temperature. It is indispensable to the well-being of the plant, but at the same time it is not the general mass of the soil which feeds it. The entire mass may be thus divided: First, the part comprising potential, or possible (future), plant food as yet insoluble in water and in acids. The second, the portion soluble in water, or dilute acid, representing the active or available plant food of the soil.

What then is the nature of these changes which are for ever taking place in a soil?

By the removal of crops the available plant food becomes exhausted, and the field ceases to be productive. But after a few years of rest fertility is found to be restored. During the interval of rest the soil has been exposed to changes of temperature, to the action of air and moisture, and it may be to vegetative force in the action of roots of plants which have taken possession of the surface. The consequence is, that under the combined influences of these forces, fragments of quartz, felspar, apatite, phosphorite, gypsum, and other mineral substances, become "weathered." They part with small quantities of their substance, which pass over into the soluble and available condition, and thus a store of plant food once more accumulates.

This mineral matter rendered soluble will not be suffered to wash through the staple of the soil, but will be only carried a very short distance before it is seized upon and appropriated by that singular force of surface-attraction already noticed; and hence we see a satisfactory rea-

son why "rest" restores land, and a clear difference between the *active* and the as yet dormant constituents of a soil.

TENACITY.—A degree of tenacity is essential to a soil. Where it does not exist in sufficient strength, the entire mass is liable to be gradually blown away. On the other hand, too great a tenacity causes a soil to be expensive and critical to cultivate, and unfits it for the growth of turnips, mangel, and other crops suitable for the winter feeding of stock. The tenacity of a soil is due to the presence of clay.

SLOPE OR INCLINATION.—The slope of land is well known to influence its productive power, and that in more than one way. Slope to a great extent controls the drainage of water, and this alone must be allowed to be of first importance. It also admits of a greater or less intensity of light and heat upon a given area of the surface.

It is from this cause that the north side of valleys, or those which enjoy a sunny or southern slope, are the most productive. It is upon such slopes that the finest wine is grown.

COLOUR.—Even colour influences the fertility of a soil, although to only a slight degree. A white soil, like white cloth, snow, or any other white substance, throws off the heat. On the other hand, dark-coloured substances absorb it.

A familiar illustration of this is seen in the fact that snow immediately underlying a piece of black cloth soon melts, while the surrounding snow, protected by its own whiteness, remains unaffected at the same temperature.

SUBSOIL.—A soil may be well stocked with plant food, and be of good physical character, but before it can be productive it must be provided with a proper subsoil. The reason of this is obvious, for upon the subsoil depends the drainage of the surface soil. A tenacious clay subsoil is by no means to be considered bad, but it will generally require to be thoroughly drained by artificial means before the superficial soil can grow abundant crops. A light sandy or gravelly subsoil secures the natural drainage of the surface, but is likely to cause it to burn or scorch in droughty weather. The effect of a rocky subsoil upon the cultivated surface depends upon the nature of the rock. A fissured dry rock like chalk is apt to give too dry a soil, while a cool porous stone, like that of the Old or New Red Sandstone, exerts an opposite effect. A rocky subsoil argues a thin soil and a low standard of fertility.

The term subsoil may be used to express the stratum which underlies the superficial earthy covering, irrespective of its depth beneath the surface, and in this case we might speak of a soil six feet thick underlaid by

a subsoil of rock or clay. It is preferred at present to limit the term soil to the cultivated section. Subsoil is then made to express the section or zone which immediately underlies the plough-sole. By this use of the word, the term subsoil harmonises with the operation of subsoiling, which always refers to the breaking up of the section immediately under that usually cultivated.

Calcareous Pan.—Cases are on record in which, after a long period of shallow cultivation, a lime, or calcareous pan is formed. It is well known that lime tends to sink through the land, and this tendency is most likely to be favoured by shallow cultivation. When a lime pan has formed, it must be broken up and mixed with the surface soil, which will in all cases be greatly benefited, while the drainage of the field will be rendered more perfect.

Indurated Pan.—The constant treading of horses and the passage of the plough-sole at one depth gradually indurates the bottom of the furrow to a mischievous extent, and forms a hard, beaten track, or pan, best removed by the adoption of deep cultivation, either by means of steam or horses.

Good cultivation is found to react upon the subsoil, and improve its texture and physical character. Thus liberal manuring, thorough drainage, and deep ploughing allow the access of air, and effect the pulverisation and aeration of the subsoil. It changes in colour from a blue or black to a red, from the same cause as converts the dark venous blood into the bright arterial stream—the action of oxygen upon iron. This is followed by a true sweetening of the subsoil, caused by the complete decay of effete vegetable matter, and when this has taken place, the roots of plants strike deeper into the subsoil, and the consequence is a deepening of the staple and an improvement of the subsoil to a depth of several feet.

Subsoils which exert a Beneficial Effect on the Surface Soil. —In alluvial soils, and where from any cause the subsoil is of similar character with the cultivated surface soil, deep tillage produces excellent results. To break up or disturb the subsoil is not by any means an operation to be promiscuously recommended, but in this case it may be followed without hesitation.

A light-topped soil, resting upon a retentive substratum, is on the whole to be considered a happy combination, although artificial drainage may be required to facilitate the percolation of water. In some cases the clay or marly subsoil may be dug up and spread upon the surface with good effect. A clay resting upon sand or gravel, if not of too open a character,

is a good combination, as such soils are naturally drained. Here also mixing the surface soil and subsoil may be attended with good effects.

Subsoils which exert an Injurious Effect on the Surface Soil.—All "pans" from whatever cause are injurious and require to be broken up. Open gravelly, or rubbly subsoils are apt to allow fertilizing matter applied to the land to work through beyond the reach of the roots of plants. They are also liable to suffer from drought in hot seasons. Such land should never be manured in the autumn, but as much as possible during the period of active vegetation.

A rocky subsoil is usually objectionable, as preventing deep cultivation, and facilitating the escape of moisture too rapidly. Soils resting on the rock seldom carry heavy crops, but they are well adapted for sheep, and are usually farmed with a view to folding sheep in winter in temperate climates, and for growing barley.

5. Classification of Soils.

Sinking for a time the important consideration of chemical composition, the relative fertility of soils is largely due to the proportion in which the already described proximate constituents are combined. It is upon this principle that agriculturists classify soils, speaking of them as argillaceous, silicious, calcareous, or vegetable, according to the predominance of one or other of these substances.

The following classification was proposed nearly forty years ago by Schübler, and may be adopted as giving a method of distinguishing the various kinds of land. The terms usually employed by farmers in describing different soils are numerous, but unfortunately either local in their significance, or the same term is made to convey a very different meaning in districts remote from each other.

Schübler followed the method adopted by naturalists in dividing soils into classes, orders, species, and varieties. He recognised eight classes, based upon the predominating element of each.

First, the argillaceous or clay group, containing always above 50 per cent. of clay—real or so called, for chemically pure clay has since been found to be much less, than by this chemist.

This class he divided into clays without lime, and clays with from ·5 to 5 per cent. of lime; and these were again divided into poor, intermediate, and rich. Hence there were no fewer than six sorts of argillaceous soils: Poor, intermediate, and rich, with but little or no lime, and poor, intermediate, and rich, with a higher percentage of lime.

The SECOND CLASS is called "LOAMY SOILS," and contains from 30 to 50 per cent. of clay. Similarly these are divided into loams containing little or no lime, and those containing from ·5 to 5 per cent. of lime, which again are each divided into poor, intermediate, and rich, making six sorts of loamy soils.

The THIRD CLASS is composed of SANDY LOAMS, containing from 20 to 30 per cent. of clay, and is divided into sandy loams with little or no lime, and sandy loams with from ·5 to 5 per cent. of that constituent. Here, as in the former classes, poor, intermediate, and rich soils are recognised with and without lime.

The FOURTH CLASS, designated LOAMY SANDS, contains from 10 to 20 per cent. of clay, and is divided into six species exactly on the principle just explained.

The FIFTH CLASS or SANDY SOILS contains under 10 per cent, of clay, and is also divided as above.

The SIXTH CLASS comprises all the marly soils. This term is only applied to soils which contain more than 5 but less than 20 per cent. of lime. Marls may be either argillaceous, loamy, of the nature of sandy loams, loamy sands, or of vegetable character, according as they coincide in their proportions of clay and sands with the previous groups. Thus an argillaceous marl must have over 50 per cent. of clay, and from 5 to 20 per cent. of lime ; and a loamy marl must contain 20 to 30 per cent. of clay, besides the requisite amount of lime.

The SEVENTH CLASS is termed CALCAREOUS, and contains above 20 per cent. of lime. This class again is divided into argillaceous, loamy, of the nature of sandy loam, loamy sand, or of vegetable character, as in the last case, and each of them is again divided into poor, intermediate, and rich.

In this class, therefore we find poor, calcareous clays, poor calcareous loams, and poor calcareous sands, or it may be intermediate or rich soils of each kind.

There are also pure calcareous soils, containing 94 to 98 per cent. of lime, and vegetable calcareous soils, divided into clayey, loamy, and sandy.

The EIGHTH and LAST CLASS deals with vegetable soils, or those which contain from 5 per cent. and upwards of humus, which are treated of as clayey, loamy, or sandy vegetable soils, according to the predominance of each of these elements. They are further divided according to the condition of the vegetable matter which renders this class highly complicated.

Reference has been made to the division in each case into *poor*, *intermediate*, and *rich*. The test as to comparative richness was uniform

throughout, and consisted in the proportion of vegetable matter. A poor soil of any class was a soil which contained from 0 to ·5 of vegetable matter; an intermediate soil must contain from ·5 to 1·5 of vegetable matter; and a rich soil must have from 1·5 to 5 per cent. of the same. Any proportion of humus exceeding 5 per cent., caused a transference of the soil into the class of humus or vegetable moulds.

The Chemistry of the Farm.

IN studying the actual composition of soils, it must be remembered that the subject has a distinctly mechanical, or physical, as well as a chemical aspect. Chemical analysis teaches us the proportion in which the various constituents composing it are present. But how little light does this throw upon the *agricultural character* of a soil! We must know something of the *texture*, and the many important surrounding conditions already enumerated, as well as the ultimate composition; and hence inspection and a mechanical analysis should precede the more elaborate processes of the laboratory. The proportion of stones, gravel, gravelly sand, coarse sand, fine sand, clay, organic matter, and moisture, are ascertained by simple, but well-contrived, means. To thoroughly understand the texture or mechanical nature of soils, their relations to heat and water must be taken into account, and when this has been done, the purely chemical analysis is rendered much more useful.

The chemical composition of the principal minerals composing the crystalline rocks will naturally be found in all sedimentary rocks, although in widely differing proportions; and they will also be found to occur in all soils. The precise composition can only be discovered by analysis, but we may always infer that the leading constituent of a soil will be the same as that which gave character to the rock from which it was derived. Thus the silicious element will predominate in sandstone soils, the calcareous in chalks and limestones, and the argillaceous in soils derived from the great clay formations.

The only material of importance to be added to the list of constituents already referred to is organic matter, which is present in all soils as the result of the growth and death of plants. It is through the accumulation of vegetable matter in soils that they become rich in nitrogen in a state of combination available as plant food. But it must be remembered that the air is the ultimate source from which soils have derived their organic matter and nitrogen, and the process of slow combustion known as decay, steadily returns these materials back again to the air, or converts them into water and nitric acid.

A broad distinction is therefore drawn between the *fixed* or "inorganic" constituents of soils, and the organic substances which are in a perpetual state of change. Leaving the further consideration of humus, we must direct our attention to the mineral constituents of soils, which are also the constituents of the ash of plants.

The following substances occur in all soils, and in the ashes of all cultivated plants, and are also found to exist in the crystalline rocks.

Volcanic Rock, Constituents.	Soil. Constituents.	Ash. Constituents.
Potash.	Potash.	Potash.
Soda.	Soda.	Soda.
Magnesia.	Magnesia.	Magnesia.
Lime.	Lime.	Lime.
Phosphorus.	Phosphorus pendoxide.	Phosphorus pentoxide.
Sulphur.	Sulphur teroxide.	Sulphur teroxide.
Silica.	Silica.	Silica.
.....	Chlorine.	Chlorine.
Ferrous oxide.	Ferric oxide.	Iron.
Alumina.	Alumina.	.....

Fluorine and manganese are also found to occur in many soils, in very small quantities.

The fertility of a soil must depend, among other things, upon the presence of every constituent required by plants, and so completely is this the case that the absence of even, what might appear, the least important substance, renders a soil unable to ripen crops.

In the above list those constituents which occur in least quantities in the soil are generally those which the ash contains in largest proportion, and are therefore most required by plants, and it is for this reason that potash and phosphorus pentoxide are highly valued as applications for land.

The constituents of soils occur in various conditions. It is not enough to know that a soil contains all the requisite materials for supplying ash

constituents to plants, but we must know the state in which they exist. Hence a complete analysis of a soil should inform us as to the proportion of substances *soluble in water, soluble in acids,* and *insoluble in acids.* A soil, from which all pebbles and considerable fragments have been sifted, should be insoluble in acids, and therefore unavailable for present use, is itself a striking fact. Equally strange does it appear that ·1 to ·3 per cent. should represent the amount we may suppose to be readily available for solution. But although the percentage is small relatively, it is very considerable positively, amounting to from one to three tons per acre of ten inches in depth.

The insoluble portion of soils must not be looked upon as useless. Not only is it the medium by which nourishment finds its way to the roots of plants, but owing to the continued action of the forces already noticed, a further disintegration is constantly taking place—a weathering action whereby fresh portions or particles of insoluble matter pass over into a soluble and available condition. The entire mass of soil may then be divided into ACTIVE and DORMANT constituents, the former class being constantly, although slowly, recruited from the latter. A soil which has borne successive crops of grain becomes exhausted of the active or immediately available ash constituents. A field exhausted in this sense, if allowed a period of rest, will be found to have regained its fertility, simply because fresh portions of mineral matter have been digested and reduced to a soluble condition. These considerations, therefore, show clearly that the large proportion of material in a soil, insoluble in acids, may be regarded as a *magazine* of mineral plant food, which will become available in the distant future.

The actual percentage composition of the soil is shown in the following analyses made by various eminent chemists. It is but seldom that a thorough analysis is made of all the divisions,—soluble in water, soluble in acids, and insoluble in acids. In the following examples the insoluble matter is lumped together as insoluble silicious matter. The table shows the composition of a fertile alluvial soil from near the Zuider Zee, in Holland, analysed by Baumhauer.

TABLE SHOWING THE COMPOSITION OF A FERTILE ALLUVIAL SOIL from near the Zuider Zee, in Holland, analysed by Baumhauer.

	Surface.	15 in. deep.	30 in. deep.
Insoluble silica, quartz	57·646	51·706	55·372
Soluble silica	2·340	2·496	2·286
Alumina	1·830	2·900	2·888
Ferric oxide	9·039	10·305	11·864
Ferrous oxide	0·350	0·563	0·200
Maganese oxide	0·288	0·354	0·284
Lime	4·092	5·096	2·480
Magnesia	0·130	0·140	0·128
Potash	1·026	1·430	1·521
Soda	1·972	2·069	1·937
Ammonia	0·060	0·078	0·075
Phosphorus pentoxide	0·466	0·324	0·478
Sulphur teroxide,	0·896	1·104	0·576
Carbon dioxide	6·085	6·940	4·775
Chlorine	1·240	1·302	1·418
Humic acid,	2·798	3·991	3·428
Crenic acid	0·771	0·731	0·037
Apocrenic acid	0·107	0·160	0·152
Other organic matters and combined water (nitrates?)	8·324	7·700	9·348
Loss in analysis	0·540	0·611	0·753
	100·000	100·000	100·000

The proportion of plant food present in soils is very small, even when the soil is extremely fertile. The surface soil (first 9 inches) of a pasture may contain when dry 0·25 of nitrogen per cent., while soil of the same depth from a good arable field may yield 0·15 per cent., and a clay subsoil 0·05 per cent. A good surface soil may contain 0·20 per cent. of phosphate acid, or not unfrequently a smaller quantity. Potash varies much, rising to 1·0 per cent., or more in some clay soils, but being generally much smaller.

The weight of soil on an acre of land is, however, so enormous, that small proportions of plant food may amount to very considerable quantities. Nine inches' depth of arable soil (clay or loam) will weigh, when perfectly dry, about 3,000,000 or 3,500,000 lbs. A pasture soil will be lighter, the first nine inches weighing when dried and the roots removed about 2,250,000 lbs. Supposing, therefore, a dry soil to contain 0·10 per cent. of nitrogen, phosphoric acid, or potash, the quantity in nine inches of soil will be from 2250 lbs. to 3500 lbs. per acre.

A large part of the elements of plant food contained in soils is present in such a condition that plants are unable to make use of it. A soil may contain many thousand pounds of phosphoric acid or of nitrogen, and yet

be in a poor condition ; while a small dressing of readily available food, as superphosphate or nitrate or sodium, may greatly increase the fertility.

The nitrogen contained in humus is not in a condition to serve as a general plant food ; cereal crops are apparently unable to appropriate it ; leguminous crops, however, possibly assimilate some humic matters. By the action of a minute *Bacterium* present in all soils, humus and ammonia are oxidised, and their nitrogen converted into nitric acid. Nitrification only takes place in moist soil, sufficiently porous to admit air. It is also necessary that some base should be present with which the nitric acid may combine : this condition is usually fulfilled by the presence of carbonate of calcium. Nitrification is most active at summer temperatures ; it ceases apparently near the freezing point.

The fragments of rock present in soil, as stones, gravel, and sand, are as a rule of little value to a plant, the elements of plant food which they contain being in too insoluble a condition to be attacked by the roots. These fragments of rock may however be slowly decomposed by the mechanical action of frost, and by the chemical action of water, and their contents thus gradually made available to the plant. The solvent power of the water in a soil is greatly increased by the carbonic acid, and perhaps also by the humic acid it holds in solution. Water containing carbonate of calcium in solution is especially capable of attacking silicates.

If water is allowed to drain through a soil it carries with it a part of the readily soluble matter which a soil contains. The substances chiefly removed by the water will be the nitrates, chlorides, and sulphates of calcium and sodium. When heavy rain falls these substances are washed into the subsoil, and partly escape by the nearest outfall into the springs, brooks, and rivers. The loss of nitrates from highly manured land during a wet season is very considerable. When dry weather sets in evaporation takes place at the surface of the soil, the water of the subsoil is slowly brought again to the surface by capillary attraction, and the salts it contains are concentrated once more in the upper soil, forming in some rare instances a white crust of salt upon the surface. Capillary attraction has little influence in the case of sandy soils.

Of these readily soluble salts the nitrates are of the greatest importance as plant food. The quantity of nitrates in a surface soil will vary greatly, depending on the richness of the soil in nitrogen, the previous conditions as to temperature and moisture, the extent of recent washing by rain, and on whether the soil is or is not under crop. Where a crop is growing the nitrates will be kept nearer the surface, the evaporation of water from a growing crop being far greater than from a bare soil. The nitrates will

also be constantly taken up by the roots, and employed as plant food. The loss of nitrates by drainage is thus far less when the land is under crop than in the case of a bare fallow.

Phosphoric acid, potash, and ammonia are very rarely found in drainage water. If a solution containing phosphoric acid, potash, or ammonia is poured on a sufficiently large quantity of fertile soil, the water which filters through will be found destitute of these substances. This retentive power of soil for phosphoric acid, potash, &c., is of the utmost importance in agriculture. The action is a complex one. All salts are doubtless retained to some extent by soil through mere mechanical adhesion ; salts, thus feebly retained, as nitrates and chlorides, can be easily removed by washing with water. Other substances are, on the contrary, retained by chemical affinity ; these are not removed by washing, or but to a small extent. The ingredients of the soil which exercise a chemical retention power are the hydrates of ferric oxide and aluminia, the hydrous silicates of aluminium, and humus.

Ferric oxide is a common ingredient of soils ; to it the red colour of many soils is owing. To the presence of ferric oxide the retention of phosphoric acid is chiefly due, an insoluble basic phosphate of iron being produced. Aluminia acts in the same manner. Ferric oxide and aluminia have also a retentive power for ammonia and potash, but the compounds formed are more or less decomposed by water. To the hydrous silicates the permanent retention of potash and other bases is probably chiefly due. Humus has a great absorbent power for ammonia. Other bases, as magnesia and lime are also retained by soil, but in a less powerful manner than are potash and ammonia.

Soils destitute of carbonate of calcium take up very little potash or ammonia when these are applied as salts of powerful acids, as for instance, the chlorides, nitrates, and sulphates. When carbonate of calcium is present the potassium or ammonium salt is decomposed, the base is retained by the soil, while the acid escapes into the drainage-water united with calcium. The addition of carbonate of calcium may thus greatly increase the retentive power of a soil for bases.

The fertility of a soil is nearly connected with its power of retaining plant food. Sandy soils, from their small chemical retentive power, and free drainage, are of small natural fertility, and dependent on immediate supplies of manure.

There can be little doubt that the plant food contained in soil which is capable of being taken up by roots, exists either in solution, or in the states of combination just referred to—that is in union with ferric oxide,

hydrous silicates, and humus. Different crops have very different powers of attacking these various forms of plant food.

The operations of tillage and drainage serve in several ways to increase the amount of plant food which is at the disposal of a crop.

By tillage the surface soil is kept in an open porous condition, favourable for the distribution of roots. By this means also capillary attraction is diminished, and the land consequently suffers less from drought; the water-holding power of the surface soil is also increased. A more important result of tillage is that the soil is thoroughly exposed to the influence of the air. Soils containing humus or clay will absorb ammonia from the atmosphere, and thus increase their store of nitrogen. The organic remains of former crops and manuring are also oxidised, the nitrogen being converted into nitric acid. The rocky fragments which a soil contains, as fragments of silicates or limestone, will at the same time be more or less disintegrated by the combined action of water and air, assisted by the carbonic and humic acids arising from the oxidation of vegetable matter, and a portion of the insoluble plant food be thus brought into a state suited for assimilation by the roots of crops. In winter time the disintegration of the various ingredients of the soil is greatly assisted by frost. Water in freezing expands, and thus rends asunder the substance frozen. Of the various results brought about by tillage, the increased production of nitrates must be ranked among the most important.

By drainage the various chemical actions we have just mentioned are carried down to a greater or less extent into the subsoil, for as the water level is lowered the air enters from above to fill the cavities in the soil. By drainage also the depth to which roots will penetrate is increased, for roots will not grow in the absence of oxygen, and rot as soon as they reach a permanent water level. In a water-logged soil deoxidation is active, the nitrates present are destroyed, a part of the nitrogen being evolved as gas; the soil may thus suffer a considerable loss of plant food.

Burning is occasionally resorted to as a means of increasing the available plant food, and improving the texture of a heavy soil. The soil is burnt in heaps, which are then spread over the land. If the soil contains limestone it is easy to see that the phosphates of the limestone may become more available by the complete disintegration which attends the conversion into lime. The lime will also attack the silicates of the soil at a high temperature, and liberate a part of the potash from its insoluble combinations. To produce the best results it is essential that the burning

should take place at a low temperature. This treatment by burning is a very extreme one, and can be recommended only in few cases; it must always be attended with an entire loss of the nitrogen in the soil burnt. The ploughing in of burnt clay is of use in improving the texture of heavy land.

THE CHEMISTRY OF CROPS.

To understand the chemistry of crops we must first inquire as to their composition. The following table gives the average composition of ordinary farm crops. The quantities of carbon, hydrogen, and oxygen present are omitted, also some of the smaller ash constituents. By "pure ash" is understood the ash minus sand, charcoal, and carbonic acid.

The composition of grain and of all seeds, is tolerably constant; but the composition of straw, leaves, roots, and tubers, will vary very considerably according to the character of the soil, manure, and season.

THE WEIGHT AND AVERAGE COMPOSITION OF ORDINARY CROPS IN POUNDS PER ACRE.

	Weight of crop.		Total pure ash	Nitrogen.	Sulphur.	Potash.	Soda.	Lime.	Magnesia.	Phosphoric Acid.	Chlorine.	Silica.
	At Harvest.	Dry.										
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
WHEAT, grain, 30 bush..	1800	1530	31	33	2·7	9·7	0·9	1·0	3·7	14·3	0·2	0·5
" straw.....	3158	2653	158	12	5·1	18·2	2.5	9·2	4·0	8·4	1·7	110·6
Total crop.....	4958	4183	189	45	7·8	27·9	3.4	10·2	7·7	22·7	1·9	111·1
BARLEY, grain, 40 bush..	2080	1747	46	35	2·9	9·8	1·0	1·3	4·0	16·2	0·4	12·0
" straw.....	2447	2080	100	12	3·2	21·6	4·2	8·5	2·5	4·4	3·2	51·5
Total crop.....	4527	3827	146	47	6·1	31·4	5·2	9.8	6·5	20·6	3·6	63.5
OATS, grain, 45 bush.....	1890	1625	54	38	3·2	8·5	1·4	2·0	3·9	11·8	..	24·8
" straw.....	2835	2353	140	14	4·8	29·6	5·9	9·8	5·3	7·1	5·5	69·3
Total crop.....	4725	3978	194	52	8·0	38·1	7·3	11 8	9.2	18·9	5.5	94·1
MEADOW HAY, 1½ ton...	3360	2822	208	49	5·7	56·3	11·9	28·1	10·1	12·7	16·2	57·5
RED CLOVER HAY, 2 ton.	4480	3763	255	102	9·4	87·4	4·1	86·1	30·9	25·1	9·4	6·8
BEANS, grain, 30 bush...	1920	1613	57	77	4·4	23·0	0·8	2·9	3·8	22·3	1·5	0·8
" straw.....	2240	1848	130	22	4·9	58·1	4·9	30·2	10·3	9·2	18·1	6·9
Total crop.....	4160	3461	187	99	9.3	81·1	5·7	33·1	14·1	31·5	19·6	7·7
TURNIPS, root, 17 ton.....	38080	3126	218	71	15·2	108·6	17·0	25·5	5·7	22·4	10·9	2·6
" leaf "	11424	1531	146	49	5·7	40·2	7·5	48·5	3·8	10·7	11·2	5·1
Total crop.....	49504	4657	364	120	20·9	148·8	24·5	74·0	9·5	33·1	22·1	7·7
SWEDES, root, 14 ton....	31360	3349	163	74	14·6	63·3	22·8	19·7	6·8	16·9	6.8	3·1
" leaf "	4704	706	75	28	3·2	16·4	9·2	22·7	2·4	4·8	8·3	3·6
Total crop.....	36064	4055	238	102	17·8*	79·7	32·0	42·4	9·2	21·7	15·1	6·7
MANGELS, root, 22 ton..	49280	5628	410	96	4·9	191·1	75·4	24·2	19·7	31·0	40·6	16·4
" leaf.....	18233	1654	280	51*	9·1	71·4	65.2	29·1	27·2	15·1	49·8	9·2
Total crop.....	67513	7282	690	147	14·0	262·5	140·6	53·3	46·9	49·1	90·4	25·6
POTATOES, tubers, 6 ton.	13440	3360	126	47	2·7	75·4	2·0	2.9	5·7	24·1	3·5	2·9
" haulm*	4274	954	50	20	2·1	1·1	2·0	22·7	12·4	2·7	1·9	2·1
Total crop.....	17714	4314	176	67	4·8	76·5	4·0	25·6	18·1	26·8	5·4	5·0

* Calculated from a single analysis only.

CEREAL CROPS.—These contain much less nitrogen than either the leguminous or root crops; about three quarters of the nitrogen is in the grain, and only one quarter in the straw. The amount of phosphoric acid is not very different from that found in other crops; this ingredient is, in

fact, the most constant of all the constituents of crops; it is chiefly concentrated in the grain. Potash and lime are present in much smaller quantity than in other crops; they are chiefly concentrated in the straw.

The presence of a large amount of silica is characteristic of the cereal crops; they possess apparently a capacity for feeding on silicates not enjoyed by other crops. The base of the silicate is made use of by the plant, while the silica itself is excreted upon the surface of the leaves and straw. It has been shown that silica is by no means essential for the growth of cereals; they take it up freely, but can also do without it.

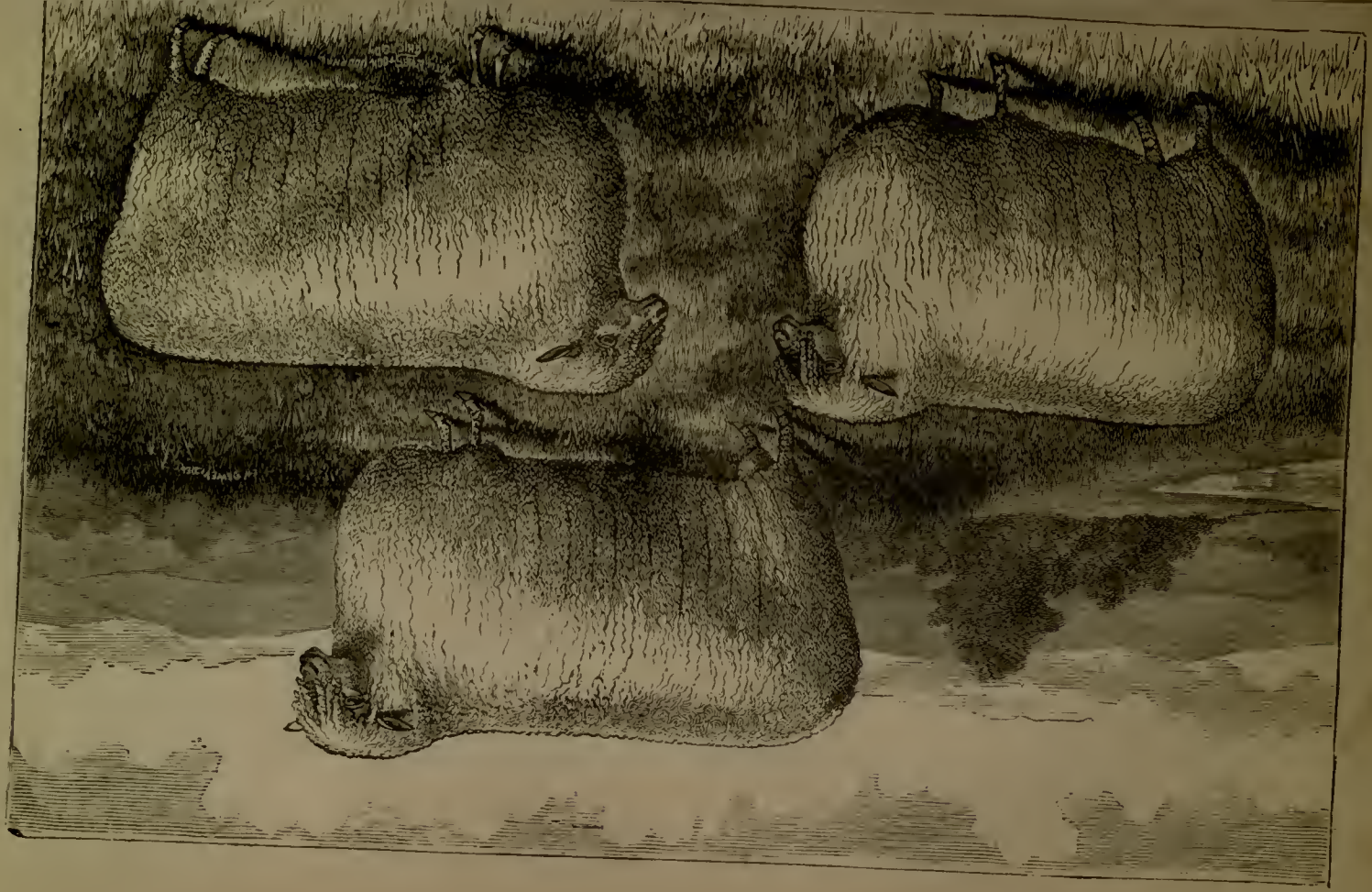
The fall sown cereals (wheat and rye) have both deeper roots, and a longer period of growth, than the spring sown cereals, and are better able than the latter to supply themselves with the necessary ash constituents from the soil. Barley possesses a considerable development of root near the surface, and is apparently more capable of obtaining nitrogen from the soil than wheat.

Cereal crops derive their nitrogen almost exclusively from nitrates; the form in which the great bulk of the nitrogen is present in the soil is unsuitable for them. Notwithstanding, therefore, the small amount of nitrogen contained in cereal crops, they rank among those most benefited by nitrogenous manures. Phosphates, though of little use by themselves, are also beneficial (especially in the case of spring crops) when applied with nitrogenous manure. A nitrogenous guano, or an application of nitrate of sodium and superphosphate, is generally the most effective manuring for a cereal crop.

Meadow Hay.—The grasses which form the main bulk of hay belong to the same family of plants as the cereal crops; the seed, however, in grass bears such a small proportion to the stem and leaf that meadow hay may be regarded as a straw crop. In accordance with this character hay is found to contain a much larger proportion of potash and lime than cereal crops; and a much smaller amount of phosphoric acid.

The roots of grass being far shorter than those of the cereals are less able to collect ash constituents from the soil; if therefore grass is mown for hay, manures containing potash, lime, and phosphoric acid will generally be required. Like the cereal crops grass is greatly increased in luxuriance by the application of soluble nitrogenous manures.

Farmyard manure, or the feeding of cake, grain, or roots on the land, is the most appropriate manuring for permanent pasture, if quality as well as quantity of produce is considered. Large crops of hay may be obtained by manuring with nitrate of sodium, together with kainit and super-



phosphate; but a continuance of such treatment promotes a coarse herbage.

The natural clovers of a meadow are destroyed by the continued application of highly nitrogenous manures, a hay consisting almost exclusively of grass being produced. The clovers are developed by the application of manures supplying potash and lime, and by pasturing instead of mowing.

The perennial character of grass, and the abundance of humus in a pasture soil, present favourable conditions for the collection of nitrogen from the atmosphere; this takes place to a greater extent on pasture land than with most other crops.

Leguminous Crops.—Some of these are grain crops, as beans and peas; others are fodder crops, as red clover, sainfoin and lucerne. A striking characteristic of all these crops is the large amount of nitrogen which they contain, the quantity being about twice as great as that found in cereal crops. The quantity of potash and lime in leguminous crops is also very large. The relative proportion of these two bases varies much in crops grown on different soils; upon a calcareous soil lime will preponderate in the crop, but on a clay soil potash. The lime is found chiefly in the leaf. Silica is nearly absent in leguminous crops.

The nutrition of leguminous crops is not at present perfectly understood. A good crop of red clover, when cut for hay, removes a large quantity of nitrogen from the land, but it nevertheless leaves the surface soil actually richer in nitrogen than it was before from the residue of roots and stubble left in the soil. From whence is this large quantity of nitrogen obtained? It must be procured either from the subsoil, or the atmosphere. The former seems the more probable, as experiments have hitherto failed to prove that leguminous plants have any special power of obtaining nitrogen from the air. The question is further complicated by the fact that nitrogenous manures generally produce but little effect upon leguminous crops. It seems pretty certain that leguminous crops possess to some extent a distinct source of nitrogen; they are probably capable of feeding on some compounds of nitrogen and carbon which are comparatively useless to other crops, and hence the facility with which they acquire nitrogen from the soil. A deeply rooted crop like red clover collects nitrogenous compounds from the subsoil, and accumulates nitrogen at the surface in the form of a crop.

The particular food supply of a leguminous crop becomes exhausted by repeated cropping, and the land is said to be "clover" or "bean sick;"

no means of remedying this condition is known save by the growth of other crops for a series of years.

Potash manures have generally a very beneficial effect upon leguminous crops; they fail, however, to cure clover sickness. Gypsum is also valuable, though to a less extent.

Root Crops.—All these crops contain a large amount both of nitrogen and ash constituents; among the latter potash greatly preponderates. Turnips contain more sulphur than any other farm crop.

The turnip and mangel crop differ in several respects. Turnips and swedes draw their food chiefly from the surface soil. Their power of taking up nitrogen from the soil is distinctly greater than that of the cereal crops. Turnips are also well able to supply themselves with potash when growing in a fertile soil, but they have singularly little power of appropriating the combined phosphoric acid of the soil; fresh applications of phosphatic manures thus always produce a marked effect on this crop.

Mangels have far deeper roots than turnips, and also a longer period of growth. They have a great capacity for drawing food from the soil, including both nitrogen, potash, and phosphoric acid. When removed off the land they are probably the most exhaustive a crop a farmer can grow. As mangels have not the same difficulty that turnips have of attacking the combined phosphoric acid of the soil, phosphatic manures are, in their case, of much less importance. Purely nitrogenous manures, as nitrate of sodium, when applied alone to mangels, generally produce a great effect on the crop; this is not the case with turnips, which require phosphates as well as nitrogen in their manure.

As both turnips and mangels consume extremely large amounts of plant food, a liberal general manuring with farmyard manure is in most cases essential for the production of a full crop; but the special characteristic of the manure for turnips should be phosphatic, and of that for mangels nitrogenous.

Potatoes are surface feeders, and require a liberal general manuring to ensure an abundant crop.

As both root crops and potatoes require large supplies of potash, kainit will be found of service on land naturally poor in that ingredient. It will be chiefly required when the crops are raised with artificial manures only, as farmyard manure will always supply a considerable amount of potash.

It is worth noting in these times in our Provincial history that the growth of forest timber is far less exhaustive to the soil than ordinary farm culture. The demand on the soil becomes, however, considerably greater if the trees are cut when young—young timber and small branches

being far richer both in nitrogen and ash constituents than the mature wood.

The Adaptation of Manures to Crops.—The true economy of manure can be understood only when we are acquainted with the special characters of the crops we cultivate. The composition of a crop is no sufficient guide to the character of the manure appropriate to it, even when we possess in addition the composition of the soil on which it is to be grown. It is not only the materials required to form a crop, but the power of the crop to assimilate these materials which must form the basis of our judgment. This fact has been much overlooked by many scientific writers, who have counselled farmers to manure their land in every case with all the constituents required by the crop, a proceeding both impracticable and unnecessary. In the case of a barren sand it may indeed be requisite to supply all the constituents of plant food before a crop can be grown, but such a case is far from the circumstances of ordinary agriculture.

When land is in a fertile condition the total amount of plant food available for crops is very considerable, and luxuriant growth may be obtained by supplementing the stores of the soil with the few particular elements of food which the crop it is wished to grow has most difficulty in obtaining. Thus, in a large majority of cases, a dressing of nitrate of sodium and superphosphate will ensure a full crop of wheat, barley, or oats, and in many cases nitrate of sodium alone will prove very effective. These cereal crops generally find the supply of nitrates in the soil insufficient for their full growth, and the supply of phosphates more or less inadequate; but in a majority of cases they are well able to obtain a sufficient supply of potash, and other essential elements of food. We are thus able, by supplying one or two constituents of the crop, to obtain a luxuriant harvest. In the same way nitrate of sodium employed alone will, in most cases, produce a large crop of mangels; superphosphate alone, a large crop of turnips; while potassium salts alone may be strikingly effective with pasture and clovers.

This special manuring for each crop is no strain on the capabilities of the soil if a rotation of crops be followed. If superphosphate is applied for the turnips, potash for the seeds, and a nitrogenous manure for the cereal crops, the more important elements of plant food contained in the soil will not be diminished at the end of the rotation. At the same time the most economic result will have been obtained from the manures employed, for each manure will have been supplied to that particular crop with which it yields the most remunerative result.

It is doubtless possible by means of rotations manured on the above principles to farm successfully with the sale of all the crops produced, and without the use of farmyard manure; this is possible at least so long as artificial manures can be obtained at a low price. In the majority of cases, however, the special manuring will only be required to supplement the general manuring by farmyard manure. Under these circumstances it would seem best, from a chemical point of view, to apply the farmyard manure to those crops which most require potash, or which stand most in need of a general manuring; such crops would be pasture, seeds, turnips and potatoes.

The economic value of potash manures varies much on different soils. As potassium salts are an expensive manure, the farmer should always ascertain by means of small field experiments whether they will, in his case, yield a remunerative result, before employing them on any large scale.

As the whole object of artificial manuring is to supplement the deficiencies of the soil, it is highly desirable that a farmer should ascertain by trials in the field what is the actual amount of increase which he obtains from the application of the manures he purchases. A few carefully made experiments will teach him what his land and crops are really in need of. Should he add superphosphate with the nitrate of sodium for his wheat? What dressing of the nitrate is most economical? Is superphosphate alone sufficient for his turnip crop, or should guano or nitrate be employed as well? What is the smallest quantity of superphosphate sufficient for the crop? Will it pay to use potassium salts for his seeds or pasture? These and many other questions can only be answered by trials on his own fields, and on the farmer's knowledge of such facts will depend the economy with which he is able to use purchased manures.

The Botany of the Farm.

THE term Botany is derived from the Greek word Βοτάνη, meaning an herb or grass. As a science it includes everything relating to the vegetable kingdom, whether in a living or in a fossil state. Its object is not, as some have supposed, merely to name and arrange the vegetable productions of the globe. It embraces a consideration of the external forms of plants—of their anatomical structure, however minute—of the functions which they perform—of their arrangement and classification—of their distribution over the globe at the present and at former epochs, and of the uses to which they are subservient. It examines the plant in its earliest state of development, when it appears as a simple cell, and follows it through all its stages of progress until it attains maturity. It takes a comprehensive view of all the plants which cover the earth, from the minutest lichen or moss, only visible by the aid of the microscope, to the most gigantic productions of the tropics. It marks the relations which subsist between all members of the vegetable world, and traces the mode in which the most despised weeds contribute to the growth of the mighty denizens of the forest. It is a science, then, which demands careful and minute investigations—requires great powers of observation and research, and is well fitted to train the mental powers to vigorous and prompt action.

Botany may be divided into the following departments:—1. *Structural* Botany, having reference to the anatomical structure of the various parts of plants, including vegetable Histology, or the microscopic examination of tissues. 2. *Morphological* Botany, or the study of the form of plants and their organs; these two departments are often included under the general term of Organography. 3. *Physiological* Botany, which is by some termed Organology, the study of the life of the entire plant and its organs, or the consideration of the functions of the living plant. 4. *Taxological* Botany, or the arrangement, and classification of plants. 5. *Geographical* Botany, the consideration of the mode in which plants are distributed over the different quarters of the globe. 6. *Palæontological* Bo-

tany, the study of the forms and structures of the plants found in a fossil state in the various strata of which the earth is composed.

But more particularly for our purpose, this science may be divided into two distinct branches. (1) *Systematic Botany,* and (2) *Vegetable Physiology.*—The first teaches the names, uses, history, and classification of plants, the second, the manner in which the various organs of plants are formed, the purposes for which they have been destined, the manner in which they act, and are influenced by internal causes.

Systematic botany is of direct importance to farmers, so far as it enables them to recognise the various plants employed in cultivation, or the weeds which are troublesome to them.

Vegetable physiology, however, is that part of botany which farmers should make themselves well acquainted with. There is scarcely an operation in the art of agriculture which does not depend upon a knowledge of the phenomena which are explained by vegetable physiology, and no man can possibly understand the principle on which he acts unless he has made himself master of its fundamental laws. All the great improvements in the preparation of land for cropping were proposed in the first instance by vegetable physiologists, or depend essentially upon the operation of laws which they have explained. Drainage is one example of this; the improvement of the roots of plants, the augmentation of the productive powers resident in particular crops, the preservation of the purity of their breeds, the mode of manuring them, the destruction of weeds, the management of timber, and many other things are wholly influenced by laws which it is impossible to understand correctly in the absence of a familiarity with the principles of vegetable physiology, independent of chemistry. A person desirous of studying agriculture upon scientific principles, requires to know the circumstances which affect the germination of seeds; why in some seasons, they will not grow, while in others their success is perfect. His attention must be drawn to the conditions most favourable or unfavourable to the progress of the seedling plant, to the gradual consolidation of its parts, to the development of the wondrous organs which the Creator has given it to feed with and multiply.

They all are most important subjects of consideration with those who would study agriculture philosophically, or who expect to introduce improvements into ordinary practice, for although it may be true that accident has led to more discoveries than science; yet there can be no doubt that such discoveries would have been long anticipated had science been consulted

In examining the Vegetable Kingdom, we observe that the individuals composing it are formed by the Almighty in accordance with a principle of order, as well as a principle of special adaptation. In other works on Botany the structure and arrangements of the various parts of the root, stem, leaves, and flowers of plants, and their different functions will be found. It is our present duty to apply the facts of vegetable anatomy and physiology to the classification of plants, and to consider the plan according to which they are grouped together in classes and families.

We see around us various kinds or sorts of plants, more or less resembling each other—or, in other words, more or less related to each other. in Systematic Botany we endeavour to mark these resemblances, and to determine their relations. It is impossible to give a scientific arrangement of the plants of the globe without a thorough knowledge of structure, and without an extensive acquaintance with the vegetation of all parts of the world. We cannot expect to determine the system on which plants have been grouped, until we are familiar with all the forms which they present. Hence, in the present state of our knowledge, there must be imperfection in our attempts at systematising. The floras of many regions in Africa, India, China, Australia, and America, are still unknown, and we may therefore conclude that in all systems there will be gaps, to be filled up as our knowledge increases. Sufficient, however, is known to enable us to group plants according to certain evident alliances.

The necessity for arrangement is evident, when we reflect that there are probably 150,000 known species of plants on the earth. In order to make these available for scientific purposes, it is absolutely essential that they should be named and classified. In associating plants in certain groups, we naturally proceed on an idea of resemblance or likeness. While in ordinary language this idea is vague and indefinite, in scientific language it must be strict and rigorous, It is not enough to say that one plant resembles another in its general aspect, we must ascertain the particulars of agreement, and the points in which they differ; we must weigh well the importance of the characters, and must compare organs which are equivalent in value; and thus we shall often find, that plants which to common observers appear alike are in reality totally different. The study of the anatomy of plants gives us a strict and accurate technical language which must be rigidly adhered to in classification.

Plants, as they occur in nature, are viewed as individuals resembling or differing from each other. Some individuals are so decidedly alike that we at once give them the same name. Thus a field of wheat is composed of numerous similar individuals which can be separated from each

other, but cannot be distinguished by any permanent or marked difference. Although there may be some variation in size and other minor points, still we at once say they are stalks of wheat. Every grain of wheat, when sown, produces a stalk of wheat; these stalks yield grains, which produce individuals like their parents. The shoots or buds given off from the base of wheat by tillering also produce stalks of wheat. On such universal and inevitable conceptions as these, our ideas of *Species* are founded.

A Species may be defined as an assemblage of individuals presenting certain constant characters in common, and derived from one original stock. For each species we believe that there has been a parent stock, which has given origin to a succession of similar individuals. They may differ slightly in size, or in colour, and other unimportant respects, but they resemble each other more closely than they resemble any other plant, and their seeds produce similar individuals. Observation and common daily experience demonstrate, in the actual circumstances in which we exist, the permanence of the types which constitute the species of living bodies. There is no evidence whatever of a transmutation of species. The erroneous statement regarding the conversion of oats into rye or wheat into chess have proceeded from imperfect observations. The individuals, however, of a species may present certain differences in regard to size, colour, etc., these differences depending on soil, and on varying conditions of heat, light, and moisture. Such differences are not incompatible with the idea of a common origin, and, moreover, there is always a tendency to return to the original type. What are called *Varieties* therefore, are variations in species, which are not in general of a permanent character, and cannot be kept up in ordinary circumstances by seed. By cultivation, however, such varieties are sometimes perpetuated. This is usually accomplished by means of cuttings or grafts, and in certain instances even by seed. Thus the varieties of the cereal grains and of culinary vegetables have been propagated so as to constitute permanent *Races*.

Plants under cultivation are liable to *sport*, as it is called, and the peculiarities and variations thus produced are sometimes kept up. All the varieties of cabbage, cauliflower, broccoli, savoys, and curled greens, are derived from one stock—*Brassica oleracea*. This plant grows wild on the sea-shore, and when cultivated it undergoes remarkable changes. Thus it forms a heart, as in ordinary cabbage; its flower-stalks become thickened and shortened, as in cauliflower and broccoli; or cellular tissue is largely developed between the vessels of the leaves, so as to give rise to the crisp and curly appearance of the greens. This tendency in the

plant to produce monstrosities was early noticed by cultivators, and care was taken to propagate those individuals which showed abnormal appearances. The seeds of such were saved, put into good soil, and no plants were allowed to remain except such as presented the required form. In this manner, certain races of culinary vegetables have been established. If, however, these cultivated plants are allowed to grow wild and scatter their seed in ordinary soil, they will, in the progress of time, revert to the original type or species. Instances such as these show the remarkable effects of cultivation in perpetuating varieties by seed. In regard to the cereal grains—wheat, barley, oats, etc.—they have been so long cultivated that we are at a loss to know the original types or species. We have been forced, in the meantime, to call them species, although they are probably mere cultivated varieties of unknown species, perpetuated as races.

It is of great importance to distinguish between mere varieties and true species, and to determine the limits of variation of different species. By not attending to this, many mere varieties have for the time been described as species, and thus great confusion and incorrectness have arisen both in descriptions and in arrangements. Another source of fallacy arises from hybrids being occasionally reckoned as true species.

Certain species not identical in origin, have common features of resemblance, and are associated together under what is called a *Genus*. A genus, then, is an assemblage of nearly-related species, agreeing with one another, in general structure and appearance, more closely than they accord with other species. Thus, the Scotch rose, the Dog rose, the China rose, and the Sweet-briar, are all different species included in one genus, Rosa, which is well characterised by its fruit, known as the hep of the rose. It may happen that a single species may be reckoned as forming a genus, when the peculiarities are as marked as those constituting other genera. Thus, if there was only one species of oak, it would be sufficient to constitute a genus, as much so as at present when it includes about 200 species. It is distinguished by its acorn from other allied genera, such as the beech, the hazel, and the chestnut. The species in a genius present one general plan, and may be said to be formed after the same pattern. Some species of a genus, having special points of resemblance, may be grouped together in a *Sub-genus*.

On looking at genera, it will be seen that some of them, such as oaks, hazels, beeches, and chestnuts, have a strong resemblance or family likeness, and that they differ remarkably from such genera as firs and pines maples and ashes. Certain genera may in this way be grouped so as to

form *Orders or Families*. While genera are groups of allied species, orders are groups of allied genera, or, in reality, more comprehensive genera. Thus, firs, pines, and larches belong to different genera, but all agree in being cone-bearing, and are grouped under Coniferæ. The rose, the raspberry, the bramble, the strawberry, the cinquefoil, the cherry, and the plum, all agree in their general form and structure, and are united under Rosaceæ. Certain genera have more points in common than others, and are grouped together under sub-divisions of orders called *Sub-orders*. Thus, the plum and the cherry have a drupe as their fruit, and are more nearly allied to each other than they are to the apple; again, the strawberry, raspberry, and bramble, are more allied to each other than to the cherry or apple. We have thus Sub-orders of Rosaceæ—namely, Amygdaleæ, including the plum, peach, cherry, and almond; Pomeæ, including the apple, pear, medlar, and quince; Potentilleæ, including the strawberry, cinquefoil, and raspberry; and Roseæ, comprehending the roses.

Certain orders, agreeing in evident and important general characters, are united together so as to form *Classes*; and sub-divisions of classes are made in the same way as in the case of orders. There are thus *Sub-classes* associating certain orders included in one class.

The usual divisions are thus Classes, Orders, Genera, and Species. These occur in all systems of classification. A more minute subdivision may be made as follows:—

I. Classes.
  a. Sub-classes.
II. Orders or Families.
  a. Sub-orders.
  b. Tribes.
  c. Sub-tribes.
III. Genera.
  a. Sub-genera.
IV. Species.
  a. Varieties.

An enumeration of the marks by which one Class, Order, Genus, or Species, is distinguished from another is called its character. In giving the characters of any division, we notice merely those which are necessary to distinguish it from others. This is called the *Essential Character*. A plant may also be described completely, beginning at the root, and proceeding to the stem, branches, leaves, flowers, fruit, seed, and embryo. This is not essential, however, for the purpose of classification, and would be quite superfluous in that point of view. In the character of classes the important points of structure on which they are constituted are given. In the character of orders (the ordinal character) we give the general structure of the included plants, especially of their flowers and fruit. In the generic character we notice the modification of the ordinal character in a

given genus—the character being taken from the parts of the flower and fruit, as in the order. In the specific character are included certain less important modifications of form, whether in the stem, leaves, or flowers, which serve to distinguish allied species.

The names of the Classes are variously derived, according to the views of the authors in regard to classification. They express some points of structure or development which are of marked importance or permanence, The orders are named from some characteristic genus included in them. except in artificial methods, where some organ is taken as the means of distinction. Genera are derived either from the Latin name of one of the species, from the structure or qualities of the included species, or from the name of some botanist, etc. Thus Prunus is a genus including the plum, the sloe, etc.; Rosa, the rose; Papaver, the poppy; Hookeria is a genus named after Hooker; Lithospermum, from two Greek words signifying a stone and seed, is given to a genus, the species of which have hard stony achenes.

In giving the name of a plant, we mention its genus and species. Thus the common Dog-rose is called *Rosa canina*, the first being the generic name, the second the specific. Specific names may indicate the country in which a plant is found, the locality in which it grows, the form of its roots, stem, or leaves, the colour of its flowers, the name of its discoverer or describer, etc. To the genus and species are added certain letters indicating the botanist who founded them. Thus, *Valeriana, L.* is the genus Valerian, as constituted by Linnæus; and *Valeriana officinalis, L.* is the officinal Valerian as described by Linnæus.

In the systems of classification there are two pursued in the arrangement of plants; one is called the Artificial method, and the other the Natural method. The higher divisions of classes and orders in these systems are founded on entirely different principles, while the genera and species, or the minor divisions, are the same in both. The genera and species are very differently arranged in the two systems. In artificial methods one or two organs are selected in an arbitrary manner, and they are taken as the means of forming classes and orders; while in the natural method plants are grouped according to their alliance in *all* their important characters. Plants belonging to the same class and order in the former system may have nothing in common except the number of the stamens and pistils, or the form of their flowers, or some other arbitrarily-selected character; while in the latter, plants in the same class and order are related by true affinity, and correspond in all the essential points of their structure. When a student knows the artificial class and order to which a plant

is to be referred, he does not thereby become acquainted with its structure and properties; plants diametrically opposed in these respects may be associated together. When he determines, on the other hand, the place of a plant in the natural system, he necessarily acquires a knowledge of its structural relations and affinities. Hence a knowledge of the latter system must be the aim of the botanical student.

Natural System of Classification.

In arranging plants according to the natural system, the object is to bring together those which are allied in all essential points of structure. It is called natural, because it professes to follow the system of Nature, and thus takes into account the true affinities of plants on a comparison of all their organs. One of the first natural methods of classification was that proposed by Ray, about 1682. He separated flowering from flowerless plants, and divided the former into Dicotyledons and Monocotyledons. His orders were founded on correct views of the affinities of plants, and he far outstripped his contemporaries in his enlightened views of arrangement. He may be said to have laid the foundation of that system which has been elucidated by the labours of Jussieu, De Candolle, Brown, Lindley, Endlicher, and others.

In arranging plants according to a natural method, we require to have a thorough knowledge of structural and morphological botany, and hence we find that the advances made in the latter departments have materially aided the efforts of systematic botanists. We may regard plants in various points of view, either with reference to their elementary tissues, their nutritive or their reproductive organs. The first two are the most important, as being essential for the life of individuals, while the latter are concerned in the propagation of the species. These sets of organs bear a certain relation to each other, and we find that plants may be associated by a correspondence in all of them. In comparing the characters of plants, we must take care that we contrast organs belonging to the same class of functions, and the value of the characters must depend upon the importance of the functions performed by the organs.

Cellular tissue is reckoned of the highest value, as being of universal occurrence, and as carrying on, in many instances, all the functions of plants. In considering the elementary tissues alone, we divide all plants into Cellular and Vascular—the former including the lower tribes of flowerless plants, such as lichens, seaweeds, and mushrooms, the latter including the higher flowerless plants with scalariform vessels, and all the

flowering plants. In the nutritive and reproductive organs there is nothing which can be considered of the same value as cellular tissue. In the nutritive organs the embryo occupies the highest place, and by examining it we divide plants into Acotyledonous, having no cotyledons, but occasionally producing a cellular expansion (prothallus); Monocotyledonous with one cotyledon; and Dicotyledonous, with two cotyledons. Proceeding to the secondary organs in the nutritive class, we find the stem is Cellular or Thallogenous, Acrogenous, Endogenous, and Exogenous. The thallus is veinless, the fronds of Acrogens have often a forked venation, the leaves of Endogens are parallel-veined, and those of Exogens reticulated. In the reproductive system the stamens and pistils occupy the highest place, as being the essential organs of flowering plants (Phanerogamia), while peculiar cells (antheridia and archegonia) have the same value in flowerless plants (Cryptogamia). Succeeding these organs in value comes the fruit, which is either a theca with spores, or a pericarp with seed. The floral envelopes are the next in the series; they are absent in Cryptogamous plants, and present in Phanerogamous; their arrangement is ternary in Monocotyledons, quinary and binary or quaternary in Dicotyledons.

It is impossible to represent the affinities of plants in a linear series. Different groups touch each other at several different points, and must be considered as alliances connected with certain great centres. We find also that it is by no means easy to fix the limits of groups. There are constantly aberrant orders, genera, and species, which form links between the groups, and occupy a sort of intermediate position. Hence exact and rigid definitions cannot be carried out.

The following is the arrangement of the NATURAL SYSTEM of De Candolle, with some division derived from Jussien and Lindley:

CLASS I. DICOTYLEDONES, EXOGENÆ, or ACRAMPHIBRYA, in which spiral vessels are present; the stem is exogenous; stomata are present, the venation of the leaves is reticulated; the flowers have stamens and pistils, and the symmetry is quinary, binary, or quaternary; the ovules are either in an ovary or naked; and the embryo is dicotyledonous. In this class there are included four Sub-classes:

Sub-class I. THALAMIFLORÆ.—Flowers usually dichlamydeous, petals separate, inserted on the thalamus, and stamens hypogynous.

Sub-class II. CALYCIFLORÆ.—Flowers usually dichlamydeous, petals either separate or united, stamens either perigynous or epigynous. This sub-class has two sub-divisions—

1. *Polypetalæ* or *Dialypetalæ*—in which the petals are separate.
2. *Monopetalæ* or *Gamopetalæ*—in which the petals are united.

Sub-class III. COROLLIFLORÆ—Flowers dichlamydeous, petals united, corolla hypogynous.

Sub-class IV. MONOCHLAMYDÆ or APATALÆ—flowers either with a calyx only or achlamydeous. In this sub-class there are two sub-divisions—

1. *Angiospermæ*—in which the ovules are contained in a pericarp, and are fertilized by the action of the pollen on the stigma.
2. *Gymnospermæ*—in which the ovules are not contained in a true pericarp, and are fertilized by the direct action of the pollen without the intervention of a stigma, and the embryo is polycotyledonous.

CLASS II. MONOCOTYLEDONES, ENDOGENÆ, or AMPHIBRYA, in which spiral vessels are present; the stem is endogenous; stomata occur; the venation is usually parallel, sometimes slightly reticulated; the flowers have stamens and pistils and the symmetry is ternary; the ovules are contained in an ovary; the embryo is monocotyledonous. Under this Class are included three Sub-classes:—

Sub-class I. DICTYOGENÆ—plants with reticulated venation in their leaves, which usually disarticulate with the stem; woody bundles of rhizome in wedges.

Sub-class II. PETALOIDEÆ, or FLORIDÆ—in which the leaves are parallel-veined; the flowers usually consist either of a coloured perianth or of whorled scales. This sub-cless is divided into—

1. *Epigynæ*—in which the Perianth is adherent, the ovary is inferior, and each flower has usually stamens and pistil.

2. *Hypogynæ*—in which the Perianth is free, the ovary is superior, and each flower has usually stamens and pistil.
3. *Incompletæ*—flowers incomplete, often staminate and pistillate, with no proper Perianth, or with a few verticillate scales.

Sub-class III. GLUMIFERÆ—flowers glymaceous, consisting of imbricated bracts, venation parallel.

CLASS III. ACOTYLEDONES, or ACROGENÆ, and THALLOGENÆ, or THALLOPHYTA and ACROBRYA, in which the plants are either entirely cellular, or consist partly of scalariform vessels; the stem when woody is acrogenous; stomata occur in the higher orders; the leaves are either veinless or have a forked venation; no flowers are present; the reproductive organs consist of Antheridia and Archegonia; spores or cellular embryos are produced which have no cotyledons. Under this class there are two divisions:—

Sub-class I. ACROGENÆ, ACROBRYA or CORMOGENÆ—with a distinct stem, bearing leaves or branches.

Sub-class II. THALLOGENÆ, THALLOPHYTA, or CELLULARES—having no distinct stem nor leaves, but forming a cellular expansion of various kinds which bears the organs of reproduction.

THE GROWTH OF PLANTS.

In considering the growth of plants, we have to distinguish that growth which is mere extension of old material from that which is the result of the formation of new substance. We have an illustration of the first case in the earliest stages of germination of a seed, or in the sprouting of a potato in a cellar. Growth may and does take place in such instances without any real increase of substance, or any augmented weight save what may be derived from water. The plant in this stage lives upon the resources stored up in its tissues, and will continue to do so till they are exhausted. But growth, in the sense of real increase of substance or of increased weight from the addition of new material, depends upon the amount of carbon assimilated, as referable to leaves Growth is also effected by incorporation of new material with the old—by an actual increase in the number of cells. These indicate the general nature of growth in the organs—the root, the stem and the leaf.

Growth of Roots.—The growing point of a root, so far as its length is concerned, is comprised within a small area just above the extreme tip, the extreme tip itself being covered by a little cap shed off from the skin of the root, and serving as a shield to it in its progress through the soil.

Growth of the Stem.—In the case of the stem and branches, the growing points, by whose agency increase in length takes place, are placed at the summit of the stem, or of its subdivisions, the branches. The growing points then form the substance of the "buds," which are either invested by leaf-scales as protectors and stores of nourishment, as in the case of bulb-scales, or by perfect leaves. The increase in the thickness of stems takes place also by means of the growing tissue, or cambium, the situation of which is different in the two main groups of "Exogens" and "Endogens." To the former series belong all our trees and shrubs, the clover, beet, turnips; in the latter are the cereals and grasses.

Growth of Leaves.—The growing points of leaves occur in various situations, according to the kind of leaf. Sometimes, and more generally, the direction of principal growth is from within outward—that is to say, from the centre outward (centrifugal); in other cases the general tendency is in the opposite direction (centripetal).

The Action of Moisture on Roots.—Much more obvious to the general observer is the action of moisture on roots. The distance to which roots will travel in search, as it were, of water, and the way in which luxuriant growth and intricate ramification are promoted, when access to it is obtained, are familiar facts. Too frequently drain pipes get choked with a mass of roots whose structure has been changed, and whose excessive growth has been stimulated by the presence of copious supplies of moisture. If there is an equal supply of water all round, the growth of the roots will be uniform; but if, as is more often the case, there is more water on one side than on the other, then the root will curve to the side where there is the fullest supply, and the power thus exerted to get at the water is greater than that of gravity.

The Action of Light and Heat on Roots.—The direct action of light upon roots is, of course, usually of a negative character. The form and direction of growth in the root may, however, be affected by differences of temperature, experienced now on one side, now on another. Darwin has shown that the movements of roots, due to irritation or contact, are checked by too high or too low a temperature. During their passage through the soil, the roots must be constantly subjected to variations of temperature, first on one side and then on another, the variations giving rise to some of the curvatures and bends of the rootlets.

LEICESTERS.

Practical Inferences.—It will be obvious, then, from what has been thus briefly said, that for cultural purposes, such as the various operations connected with tillage, the nature, quantity, and time of application of manure, and the like, the character of root action in general, must be studied in connection with the nature and properties of the soil. The special form and characteristics of the root in the particular crop it is wished to cultivate—tap-rooted, fibrous-rooted, fleshy, surface-rooting, or deep-rooting, etc.—must also be taken into consideration in the same relation.

Action of Heat and Moisture upon Leaves.—A few words upon the influence of excessive temperatures may be appropriately given.

If the temperature fall below a given point, variable for each species and also for each individual plant, the functions of the leaf are held in abeyance, chlorophyll is only imperfectly formed (hence the yellow tinge of frosted wheat); and if the temperature be still further depressed, death results.

Action of Frost.—When a leaf is frozen, the fluid contents escape from the cells by permeation through their membrane, and freeze on the outside of the cell, so that the spaces between them are full of ice. It rarely happens that the juices of the cells freeze in the interior of the cells—if they do, rupture of the cell wall and death are the most probable results. Under ordinary circumstances, the cells lose that turgescence which is necessary for their activity. All the functions of life are arrested, not necessarily never to be resumed; for, in some cases, when the ice in the tissues of the plant melts, the water is re-absorbed by the membrane, and life action is resumed. Winter wheat must frequently become frozen in this manner, but it is comparatively rarely that the plant is killed outright, farmers wisely choosing those varieties which experience has shown to be the hardiest. If the cold is sufficient to kill the leaves, or any portion of them, the leaves become limp and blackened. The limpness is easily accounted for by the causes we have mentioned, as well as by the stoppage of supplies of water from the root. The discolouration is the effect of some molecular change in the chlorophyll, at present not understood.

Action of Excessive Heat on Leaves.—Too high a temperature also arrests or perverts all the functions of the leaf. Where transpiration is excessive, and the absorption of fresh supplies not in proportion, the leaves speedily wither, as may be seen in a field of mangels on a hot day, when the evaporation of watery vapour from the surface is greater than the absorption of moisture by the root. On the other hand, during the

night, while the roots are still at work, the transpiring power of the leaf is lessened, and drops of water exude from the leaves. Where the temperature is so high as to kill the plant or leaf outright, it is the protoplasm which dies; its constitution and molecular construction become changed, its power of absorbing water destroyed, and thus the turgid condition of the cells is lost.

Influence of Heat and Moisture on the Stem.—The growth of the stem is directly influenced by heat, there being in this as in other cases a minimum below which growth cannot take place, an optimum at which it takes place most vigorously, and a maximum beyond which heat is injurious. The favourable influence of heat it is which in part overcomes the influence of gravitation, and enables the stem to ascend. The stem will grow fastest and strongest on the side most exposed to the heat, if that heat be not excessive, and this tendency will remove it from the soil. Similarly a moist condition of the atmosphere favours growth, and the stem will grow the faster on the side most exposed to the moist vapour, and, owing to the convexity so formed, it will in consequence bend its free end and its concavity towards the drier side.

Germination.—The conditions under which germination takes place need not be alluded to at any length, as they are the same as those requisite for growth, and practically every cultivator knows that air (oxygen), moisture, and heat, varying in amount according to the plant and according to circumstances, are required, and that his success depends in great measure upon the proper tillage of the soil which secures these requisites. When the seed, or rather the embryo plant within it, begins to grow, water is absorbed, the seed swells, the insoluble starch stored up becomes converted into glucose, or a form of sugar, by the agency of a nitrogenous substance which acts as a ferment. These chemical processes are accompanied by an evolution of heat and an outpouring of carbonic acid gas. Thus is it that in malting barley the grain swells, gets hot, and its starch is converted into sugar. As the seedling grows, both starch and sugar gradually disappear, although the stock of starch is continually replenished so long as the leaves continue to act. The nitrogeneous constituents of the seed undergo similar changes from the insoluble to the soluble condition, the latter being capable of transport from place to place as may be required.

Fertilisation.—In the case of plants grown for their fruit or seed, as in the case of wheat and cereals generally, much attention has naturally to be paid to the conditions which favour sexual multiplication.

The morphological characters of the plants undergo a change. In general terms, it may be said that the growth of the stem is arrested, and the growth and mode of development of the leaves not only arrested, but more or less profoundly modified, so as to form the parts of the flower. All parts of the flower are constructed on the same original plan as leaves.

The process of fertilisation may be described in general terms as follows :—The ovule contains, in a cell just beneath the skin at its summit, one special piece of protoplasm, the "germ," which is destined to develop into the embryo plant. The pollen-cell consists of an outer coat and an inner lining ; the outer coat bursts, and the inner protoplasmic lining is protruded in the form of a tube, which passes down between the cells of the stigma and style, growing in length and feeding as it goes, like a parasitic fungus, on the contents of the cells of the style, till it reaches the ovule and comes in close proximity to, if not actually into contact with the germ. In consequence of this action a cell-wall is formed around the germ, which latter divides and subdivides in various directions, the result of the subdivision being the formation of an embryo plant, while the ovule covering the embryo ripens into the seed. The germ is thus fertilised by the pollen or sperm-cell, and unless the two come in contact, the formation of the embryo plant does not take place.

Cross Fertilisation.—It has been mentioned that the flowers with which the farmer is concerned have for the most part their stamens and pistils in the same flower (hops are an exception), and therefore they may be described as structually hermaphrodite. It does not, however, follow that they are functionally hermaphrodite—that is, that the pollen-grain of any particular flower fertilises the germ-cell of the same flower. As a matter of fact, the reverse usually happens, and the pollen of one flower exerts its influence, not upon the germ of its own flower, but upon that of another, perhaps situated on some other plant. Cross-fertilisation is often necessitated by the circumstance that while the pollen of any particular flower may be ripe, the stigma and the germ-cell of the same flower may not be ripe at the same time, or *vice versa*, and in such case the co-operation of some other flower is needed.

Hybridisation is a procedure with which the gardener is much more familiar than the farmer. It is only a further development of cross-fertilisation. Cross-fertilisation, as has been said, takes place between flowers of the same individual plant, or between flowers of two different individuals of the same species ; but hybridisation is effected by crossing the flowers of two separate species, as in the case of Alsike clover, which is said to be a hybrid between the white or Dutch clover and the red clover.

The Farm and Meteorology.

CLIMATE.—The influence of weather upon crops is far greater than the influence of manure. If to the possession of the previous characteristics of a good soil we can add a good climate, we shall have all the necessary conditions of fertility. The importance of climate cannot be overrated, for it is the immediate cause of the vast difference in productive power between a Tropical and an Arctic region. The term climate expresses three conditions, each of which is essential to the vegetative process—namely, light, heat, and moisture. These three conditions are all due to that energy which is constantly emanating from the sun, and hence vegetable life becomes more and more intensely active as the power of the sun increases, whether it be towards the equator, or towards that period of the year when the sun's action is most direct and long continued.

It is perhaps scarcely necessary to remind the student that the general character of the climate varies chiefly with latitude. If climate steadily improved as we travelled southward, and steadily became colder as we travelled north, the subject would have but little interest for agriculturists. This is, however, far from the case, for the climate of a country or locality is always considerably affected by various other circumstances besides that of latitude. To such an extent is this the case, that probably every farm, and even field, boasts a particular climate, and practical farmers take climate into account when they are weighing the advantages or disadvantages of particular farms.

England lies in the same latitude as Moscow, and considerably higher than Newfoundland. The favourable climate which, despite adverse criticisms, England enjoys, is due to its insular position and the Gulf Stream, and, interesting as the subject is, we cannot further enlarge upon it here. Besides latitude, climate varies under the following circumstances: *Altitude, longitude, proximity to the sea, lakes, rivers, or marshes, aspect, character of the soil, and situation, as affected by shelter, slope, or inclination of the ground,* etc. Each of these circumstances exerts a marked effect upon the climate of a farm, and therefore upon its productive power.

ALTITUDE.—Wheat refuses to ripen in Britain when grown at elevations of from 1000 to 1200 feet, a fact which proves the influence of altitude. An elevation of 1500 feet is sufficient to seriously impair the fertility of fields for even the hardier crops. On the other hand the same, and a much higher altitude, on the American continent grows wheat to perfection.

LONGITUDE.—Climate varies considerably in the matter of rainfall from east to west. The effect on the agriculture of the two sides of an island country is also easily seen in the prevalence of grazing on the west, and the leaning towards the cultivation of cereals on the east. The Gulf Stream also acts beneficially on climate, receiving additional warmth from its presence.

PROXIMITY TO THE SEA usually gives a more uniform temperature than is enjoyed far inland, and this is attributed to the uniform temperature of the adjacent mass of water.

LAKES AND MARSHES influence climate. The latter especially often give rise to night fogs, which chill the ground and render the air unwholesome. An ordinary result is the prevalence of ague, and, it may be, certain forms of fever among the human population, and even the live stock of the farm are apt to suffer from allied ailments.

FORESTS.—The leaves of trees condense the atmospheric vapour, and precipitate it to the ground, as may often be noticed in a humid atmosphere. It is many years since Humboldt pointed out the effect of forests upon the supply of springs, and the consequent injury that may follow from their destruction. Hills clothed with wood offer a barrier to the descent of cold currents of air, and are also directly a shelter from the wind. The difference in temperature between a bare mountain and one which carries a forest on its higher slopes has been often remarked.

ASPECT is an exceedingly important element in influencing the climate. Who does not know the value of a southern aspect for wall-fruit, or of a northern aspect for a dairy? Such cases at once show that aspect exerts a decided influence. Attention has been drawn to the effect of slope or inclination upon climate, and such effect might have been included under the present heading. Aspect is, however, a wider term, and might include, as it certainly goes beyond, slope. The aspect of a house or a bedroom is a matter of importance, and so also is the aspect of a field.

SHELTER.—Exposure or shelter must also be enumerated as a regulator of climate. An exposed situation is airy, breezy, or windy, according to the speed of aërial currents. It is often intensely cold, because the more rapidly a cold wind passes over any object, the quicker does it abstract its

heat. Shelter, or protection from exposure, is highly valued, although in sultry weather we may long for the breezy unsheltered down or mountain side. Shelter is among the few climatic conditions which may be controlled, and hence a great deal of attention is given to it by agriculturists. A sheltered situation for house or homestead may be chosen, or trees may be planted, which in time will give what nature has denied.

There is also a larger sense in which the term shelter is applied, as when a range of mountains give shelter to a large district or fertile valley, conferring upon thousands of acres the advantages of an improved climate. A good example of this is seen in the grazings under the shelter of the Rocky Mountains.

Character of the Soil is one more factor in the sum total of conditions which control climate. Any one may notice that the fog on an autumn evening hangs over a clay bed just as it hangs over a rock in mid-ocean. The cold nature of the clay ground first condenses the atmospheric vapour into a visible form. Delicate animals such as turkeys cannot be reared upon clay land, and clay land districts are injurious to persons afflicted with weak lungs. On the other hand, a dry soil admitting of free drainage gives a warmer and dryer, and, in a word, a more wholesome atmosphere.

It is by modifying the character of land that drainage is considered to be a positive improver of climate. Artificial drainage causes water to quickly disappear beyond the influence of evaporation, and gives those advantages to a clay soil which are originally enjoyed only by those that are naturally drained.

Influence of Climate upon the Productive Powers of the Soil.—The importance of climate upon the fertility of soils can scarcely be overrated. It is seen not only in the different amount and character of the products of tropical and temperate countries, but also in the varying yield of our fields from year to year. A few facts bearing upon these points may perhaps be here introduced with advantage.

It is an ascertained fact that the period required to mature any crop varies with the climate. Wheat requires 160 days to ripen near Paris, 182 days in Scotland, and only 85 days at Guelph, in Canada. So completely does the period of growth and maturation depend upon the total amount of heat a crop receives, that the mean temperature of a wheat-growing country (taken during the period of growth) multiplied by the number of days required to perfect the crop, gives approximately the same numerical result. In other words, the total amount of heat required to perfect a crop of wheat is approximately the same.

It will be seen, therefore, that in cooler countries, like Scotland, a larger amount of heat is required to mature the crop than in countries where the sun is more powerful. In Egypt, on the banks of the Nile, with a mean temperature of 70° F., barley requires only 90 days; and in South America corn comes to maturity in 92 days, with a mean temperature of 81·5° F. Examples might be multiplied, but it is unnecessary to do so, since those already given will sufficiently show that the productive power of the earth may be doubled by the quickening energy of powerful heat, for two crops in one season become a possibility.

Although in a less degree, many important differences in the kind, quantity, and quality of our own farm produce spring from the same cause, Altitude is often equivalent to latitude in its effect upon climate. If 56° F. may be taken as the mean temperature of a good vegetating season in Britain, say from 1st April to 30th September, an elevation of 590 feet will be equivalent to the loss of 1° on an average. Such situations are exposed to a greater range of temperature than lower and more sheltered places, owing to unchecked *radiation* during the night, and the consequence is an element of uncertainty, which from time to time involves the loss of a crop. The following facts relating to the effect of climate upon produce may serve to illustrate this point further:

English-grown wheat is inferior in quality to that from the south-east, Europe, and hot countries in general—such as the American continent. It has been found that Indian sorts of wheat are relatively cheaper, compared with other qualities, and accordingly they have grown in demand.

The Cultivation of Trees as affecting the Farm.

THE general importance of this subject, and its special application to Canada, is necessarily our first consideration, and it is one that has been ably handled by evidence before the recent Agricultural Commission, and other sources. The great points of trees or no trees, of retained moisture or rapid evaporation, of irregularly or regularly distributed rain fall, of unchecked storms or amelioration, of more or less temperate temperatures, and of the secondary but telling ones of ornament and cropping revenue—all go to make up a chapter of keen interest in our yet but short history as a nation.

Were evidence needed either to convince or stimulate us to action, the fact of what is being done in the conservation and replanting of forests in other countries should awaken both our pride and deep interest, as such lessons are plentiful in India, Australia, and the neighbouring Republic. There, Forestry is a profession and a Governmental department, systematically conducted by able officers, who are liberally supplied, first, in the item of experiments, and then in the establishment of extensive re-clothing of lands chosen by virtue of judgment based upon these and other known facts acquired by experience, or as shown by Nature herself.

When we desire to bring this matter right home to the farmer and his son here, the story takes seven distinct heads:

1. Shelter for crops.
2. Shelter for grazing animals.
3. Shelter for dwellings.
4. Regulation of temperature.
5. Regulation of rainfall.
6. Ornamental purposes; and
7. As a cropping investment.

The area and value of the forest lands of Canada are still of great magnitude;—indeed, of such magnitude that all the reliable information we possess from the brief notes of surveys stands as evidence of our ignorance of its variety, wealth, and extent, because any survey partakes so much of the character of straight-line testing that whole blocks of hundreds of acres of many kinds of our best timber lie untouched and unknown—at least to Government. It is surely within the scope of a reasonable outlay, and not many years' work, that the country should hold one map showing the principal tree crops on every surveyed lot, as well as on every outlined township, district, and limit. While we know intuitively that we are wealthier than we appear to be, it will give us no better standing in the world's market to make a story about it without actual inspection. Besides, when we talk scientifically, as we must do, in respect of forest influences upon many things ere practice goes afoot, it is most material to be thoroughly familiar with the existing condition of our forests as regards first, second, or any subsequent natural growths, and how far they are likely to subserve the ends in view.

The requisite proportion of tree surface to that under agriculture, is another of the studies yet little understood by scientists, and cannot, so to speak, be handled practically with any precise measure of reason, until further experiments point to safe data; but, from the extreme of overclearing on the one hand, to that of too much forest on the other, there is safe ground for *no delay* on the part of any Government. Of course this would bring up the allied point of what parts of the country should be conserved and what parts replanted, subject to the regulation of appropriate positions and adaptability of soil and climate in each particular example.

It should be one of the particular duties of the Professor of Arboriculture to educate in regard to the susceptibility of certain kinds and *forms* of trees for special purposes—whether for field clumps, shelter belts, roadside shade, neighbourhood of dwellings, or for more extensive planting—in addition to the management of them in all their detail from the seedbed, transplanting in the nursery, preparation of land for planting, their annual maintenance, thinnings and their value, enemies to and diseases thereof, to the grazing of replanted lands, and the ultimate realization of the matured crop.

Thus should we be in a position to advise our Legislatures on the great national problem of the special and general conversation and replanting, by which it would be shown that enclosing, draining, regulation of fires, animal trespass, and supervision stood as items of public expenditure of

the first class, so that one of the first of their duties is the establishment of Forest Departments, and the appointment and duties of a Conservator of Forests for each Province.

But it is not with Canada alone that arboriculture has to deal in the future, the whole of this vast continent is concerned—how much no one at present will ever realize, and that is what strikes at the root of man's indifference on the subject, that is, that he cannot himself personally hope to receive all the benefits from the conservation of the present trees, and particularly from replanting. American returns must be smart, strong and undoubled; the idea of permanency in the long after years does not concern us so much as *now;* we are fond enough of speculating upon cause and effect, and, in this matter, delight in big talk, that indeed does not lack for as much soundness as Europe can produce, but it is talk largely only. Let us add to this phase of our life by submitting some other thoughts on such an important subject, with the hope that we are not far off from acting up to what is preached.

The General Importance of Forestry in North America.

It is the experience of the world that more difficulty, in all its forms is found in reclothing with trees where trees grew before, than it is to plant—not replant—a country for the first time. There is not only the practical fact of succession of cropping in its scientific and natural bearings as similarly realized, for example, in the products of the farm, but the more serious one of the indifference of its population. It is just a piece of human nature everywhere, that what has been felt as common and every body's property, is no one's particular business when remedies are asked for in the exigencies of public affairs.

By Forestry is meant the whole science and practice of arboriculture; the conserving, the care-taking, preservation and proper management of existing trees, and the replanting of land for purposes now to be discussed. Speaking generally we are, and we are not, deeply concerned, as a nation, in the more modern views of forestry. In Europe it takes a shape that may never be realized here, because of one thing.—that one thing is large proprietory, the possessing within *one man's* power all the area and class of soil suitable to profitable production on a large scale, so that even that one man can employ officers and men in such numbers as to make profits certain. Cultivated America meantime is so subdivided as to effectually preclude all idea of sufficient massing of woods to receive equal results with Europe—but the day may come. Though not thus situated for

forest culture, we are otherwise obliged to give it a place in our rural economy. It is especially applicable to any country that has been a forest by nature, where in some things nature has been unthinkingly trampled upon, and where agricultural progress now demands the aid of her sister science—arboriculture. We are not singular in these matters, and can sympathise with

What is being done in the Conservation and Replanting of Forests in other Countries.

There is no country whatever that has made its agricultural history and does not now complain of want of trees. India, Australia, Europe and the United States, all tell their story of overclearance, of the need of conserving, and of the necessity of replanting. Their greater years than ours has given experience that should encourage, and dismiss all doubts on our part. The effects of judicious re-clothing are already subjects of congratulation, and of yearly revenue in competition with agriculture, so much so indeed with some that the other is not uncommon talk with proprietors. India has her standing army of foresters, trained to all cunning in sylvan matters, at European schools; Australia can already boast of its "Forest Board,"—its conservator of forests, tree nurseries, extensive enclosures planted and to be planted, and a whole system of arboriculture of the most encouraging kind, and the United States, though doing more talk than spade work, are unquestionably on the very margin of a revolution, they have not gone through the forest without "seeing some firewood."

The Objects of Conserving and Replanting are not a few.

Most people think of trees, first of all, as means of shelter—under several forms. We like shelter for buildings, shade for ourselves, shelter and shade for animals in the field and shelter for farm crops. These alone would make up a large value in any district where required, and would justify all the cost and subsequent attendance. Yet, we have another aspect of the question that takes an equally strong place in our regard:—*Climate* is not alone a matter of great outside causes, but one intimately related to local influences, among which trees are pre-eminent. We have no time to show how temperature, rain-fall moisture, and evaporation are directly influenced by a small or large surface of trees—how therefore water in every form is in the hands of trees for local distribution. This second duty of forestry as a science and practice would even

seem to swallow up the previous question, and are consequently inducements alone to its prosecution on our part. Were neither of these sufficient, however, to convince, the third great reason for tree cultivation will surely convert even the most stiff-necked among us. It is no matter of doubt, under average conditions, in any country, that tree culture is more profitable as a crop than its own agriculture, year by year. This position is not open to question, but clear and marked in all experience where age has given time for proof. And lastly, some men are satisfied when large expenditure secures what to them is all in all—ornament; and assuredly ornament is value. Who would not give $500 more for a farm where the buildings are set off by just the kind, number, and proper position of trees and tree clumps.

The Area of Land in North America

is not an unknown thing. There is no case in Europe as regards *small propriety*, having recently occupied a forest country, and where extensive clearing took place for agricultural development. But it is not true that the American continent is now poorly wooded in comparison with other countries; the United States can show twenty-five, and Canada fifty per cent. of the cultivated districts, as still under trees. This is possibly larger than any other continent, if we except the northern part of Europe, where agriculture is necessarily at a discount, and where the forest is practically untouched. What then is the cause of our discontent, if on an average, *one-third* of populated North America is still under forest? why do we advocate conserving and replanting? or in other words, what are

The Requisite Proportions of Tree Surface to that under Agricultural Crops.

This is just one of the things that we do not know, and that we are not likely ever to know as a point for general practical guidance. The conditions affecting climate are so various as affected by latitude, altitude, aspect, soil, sea or lake neighbourhood, and vegetation, that no possible number of observations, in any length of time, could say how much for one district is so much for another. However, men do come to realize through science and practice—practice especially—that a farm, or a district, needs the protection in certain places, and thus by such a simple guidance alone, a country could be easily reclothed to the extent required, at least for shelter, if not for regulation of climate, or of sufficient area as

a cropping investment; this point of immediate shelter is, therefore, within everybody's knowledge, and needs no scientific recognition, and should not require any governmental spurring. But the greater field of climate, as an unknown one practically in this relation, is more a national problem, and still very much a scientific enquiry, and what it will have to say in regard to the proportion of trees to farm crops no one can tell. Of course, if we disregard everything but the direct profits from trees as a crop upon land, then we shall likely override all other deductions, and possibly bring back the days of laziness and unhealth. Viewing trees in all their relations, I am of opinion that upon an average of conditions in Ontario—one-fourth of the land should be under trees, and as this is just one-half what we have at present, there rests the apparent inconsistency of wanting to conserve and replant, all the while that we have double what is needed. This brings out the fact that it is the *irregular distribution* of tree surface in our case which gives trouble, that some parts have more than required, and others have been over-cleared. So then

The Existing Condition of our Forests.

is the very first consideration in this enquiry. What is the condition of all our woodlands, both in the older and newer townships at the present moment, and what should be done with them in order to their best maintenance—such a maintenance as shall secure annual revenue, shelter, and climatic amelioration along with the due agricultural development?

Outside of the lumbering interest there is no enclosing, preserving, caretaking, or conserving in any sense, except the right of individual ownership, some of whom do act the forester, but nationally there is nothing recognised, and hence waste. The average bush of North America is a beautiful sight, and yet a sad one. The artist must revel in its variety of form, and foliage, but the fighting for place, the scraggy monarch of three hundred years, smothering even as he dies, scores of plants that but for him would attain to value; the general want of light and air, and otherwise a decay and loss, recognised only by those who are scientifically and practically foresters. I do not mean that our forests in every case should be managed similarly to those in Europe, because most of our best timber requires very different conditions, but similar principles ought to guide our management. While then, we owe a steady eye to progressive judicious replanting, it is above all others our first duty to manage well what we do possess. It will be cheapest, the most rapid, and the most sure method of re-adjusting matters—along, no doubt, with a certain replanting of cleared land. No fear need exist in regard to

THE ADAPTABILITY OF SOILS AND CLIMATE TO RAPID RESULTS,

for nature herself has already shown us what to do both in repeating the same kind of crops, and in the proper rotation of trees, by sections of the country. But that nature has been the best guide in most things is not admitted. We cannot follow her in the mode of thinning out so many annually, in making branchless stems, and therefore leafless and shelterless trees, comparatively. It is sound in practice, though not in theory, that ten trees, of certain kinds, standing within a given area, will afford less shelter, less wind break, than three trees of exactly the same sort, properly managed on the like area. We have soils and climates wherewith to do almost anything in tree life—from the pine of the north, which luxuriates in an apparently bare rock cleft, to the walnut of the south, that must send its carroty root several feet into a rich soil. European forest revenue begins, on an average, fifteen years after planting; that of America ten years afterwards.

As the subject grows upon our attention, we are next concerned with

WHAT PARTS OF THE COUNTRY SHOULD BE CONSERVED OR REPLANTED

and in this part of the study it is obvious that our views cannot be confined to single farms, or even special sections. Referring, as we must, to the great over-ruling influences, as previously indicated, we have to deal with geographical features that may embrace thousands of acres that have to be subserved by one, or more, massing of trees. Just where to conserve or replant, how much on the spot, or spots, in what particular form —belt, clump, or block—and with what kinds of trees, so as to gather and dispense all the virtues that trees are known to possess, is the great problem of the future. To say that we should replant only our less valuable soils is nonsense, though sensible enough from the cultivated standpoint; that high lands should be conserved or reclad as against lower parts is largely true, though not generally applicable, and that conserving and replanting must go hand in hand, and take place anywhere as found necessary through experience, is correct in every sense.

Following this view of the subject there is naturally that of

SUITABILITY OF CERTAIN KINDS AND FORMS OF TREES FOR SPECIAL PURPOSES,

Whether for neighbourhood of dwellings, road-side shade, shelter-belts, field clumps, or for more extensive planting, efficiency and permanency in

every example are the primary considerations. It is not difficult, because experience is extensive, to decide on those species of trees for roadside, and house shelter, but much has not been done for the others, and so some advice will not be out of place.

To attain all the objects desired in replanting it is obvious that many varieties together in one clump or plantation would be indispensable; early shelter and rapid returns for the money invested would be best secured by certain kinds of trees more than others; such trees would also serve as nurses to others, and permanency in their case would not be wanted, but we would desire in their character a full and spreading foliage coming early and remaining late in the season, or even throughout the winter, to attain size in ten or fifteen years, and to be of a quality that would fetch a handsome revenue per acre for the period since planting. The removal of these gradually from the plantation as required by the progress of the other sorts would form, as it does now in other countries, a nice scientific and practical study. The second class of trees in such a plantation should be of a less spreading habit and more of upright growth so as not to interfere too early with the first and third classes; they should also begin to offer some revenue at thirty years, because the most of them would have to give place to the third or standard class, in about fifty years from the date of planting. In all well regulated planting one set of trees is held as those to remain as long as good management, their own natural habits, and a proper time to harvest without loss, will allow. These are the third class referred to, and necessarily we desire a slower growth, a habit that will not spoil by close neighbourhood—a sociable plant therefore, giving high value when cut, maturing late, holding its maturity long, giving low branches and many leaves, a gatherer and holder of atmospheric moisture, a wind sifter, and holding electric communication with cloud and other trees at a distance. We have such trees of several varieties.

The preparation of the land, detailed method of planting, distance apart of trees, including fencing, drainage, knowledge of enemies and friends in nature, and all the management throughout in order to attain the highest results are too much for my time on this occasion.

The farmer's view of a wood, is grazing. Modern Arboriculture does not recommend it in Europe at any stage of growth, yet, with us in the more difficult maintenance of permanent pasture, I see no objection to the admission of sheep during the second, and cattle during the late cropping periods.

The duty of legislatures, in regard to existing woodlands, and replanting, is being pressed upon our attention from various quarters, and unquestionably ere long every progressive country must take some action. How much to do, and what not to interfere with, will make the bill. That the Ontario Government has a warm side to trees is well known, and it is to be hoped that whatever they do will be early, full, good, rapid and permanent.

American Forestry will have no place in all its scientific and practical value until one of two things be accomplished: one is the conviction on the part of our farmers of the necessity of conserving and replanting, therefore their education up to these, and the other is the power by Government to resume parts of the country for conserving and replanting. Both will be difficult; the former would be the slower, but eventually the most thorough because of self-interest; the latter would be more immediate and possibly less efficient practically, though scientifically better applied. No large number of various interests could be so well arranged as by a company, and therefore Government will have to become foresters in all the many details of the profession. Were a properly conducted system of forestry begun in 1884, the results would be so strong in the year 1900 as to astonish. It would possibly change much of our present agricultural practice; it would certainly enhance the production of winter wheat to an immense extent; it would enable us to graze nearly two for one by checking rapid evaporation and encouraging permanent pasture: it would largely nullify droughts, perpetuate streams, and generally make climate more regular and reliable.

To those acquainted with Arboriculture as a profession in all its national bearings, an annual expenditure of $50,000 has in other countries made an *annual* crop revenue of $25,000 within fifteen years, in addition to the *triple* value of climatic amelioration.

"ROYAL SIGNET," IMPORTED COTSWOLD RAM.

The Buildings of the Farm.

SEEING there are so many kinds of farming it may reasonably be assumed that, for their accommodation, there should be a corresponding diversity in the size and arrangement. But before explaining any general rule, and applying it to construction, it is necessary, as a preliminary investigation to ascertain the particulars which constitute the most proper *site* which the buildings of the farm should occupy.

Were theory alone to determine the site of the steading, it would be at the centre, as being the point equidistant from the circumference of a circular farm. But, for the sake of practice, farms cannot be laid out in the circular form. Farms are therefore laid out in the quadrangular form, having straight sides, wherever practicable. The centre of such a quadrangle is the proper site for the buildings, and from its centre alone, it is obvious that a farm can be most economically conducted.

Difficulties, however, of a physical nature often interfere with the choice of the centre as the most proper site. The centre may be very much elevated above the other parts, or it may be a low marsh or a lake In either case the building cannot be placed in the centre of the farm.

When the farm contains both permanent, pastoral and low arable land, the building should be placed upon it, and at the centre of the arable portion, whether that be the centre of the farm or not.

Convenience often decides the site of a steading. Command of water-power is a strong incentive to place it by the side of a river. But it is worthy of consideration at first, whether the river is capable of affording a constant supply of water throughout all the seasons. If it does, then the buildings will be economically placed near the river, though that may not be at the centre of the farm; but if the water be deficient in quantity, if it affords a sufficiency only in winter, then it is more economical to place the building near the centre of the farm.

A good road is a natural inducement to place the buildings beside it. But this advantage, natural as it is, may be purchased by the sacrifice of

a greater. Should the buildings be placed, in consequence, at the extreme angle of the farm, such a sacrifice would be made. We know several which are thus inconveniently placed, for the sake of a good road and the command of water power; but these advantages were obtained at the additional expense of maintaining extra labour to work the most distant fields of the farm. Better make a good farm road to the leading one from the centre of a farm, then place the buildings at its upmost corner.

Good shelter induces the placing of buildings in it. A warm and comfortable situation in winter conduces much to the well-being of all concerned. But this desideratum alone should not induce the placing of the building at a point whence the farm would have to be worked at increased cost.

A pleasant view from the farm-house may naturally induce the placing of a steading a short distance away from the centre of a farm.

There are particular spots which should be avoided as sites for buildings. A rocky knoll presents difficulties in making a foundation and cellar for buildings, and it is unsuited to proper drainage. Close to a river or lake, on a level with its banks, renders drainage impracticable, and should be avoided on account of the dampness of such a situation. A bed of dry loose sand is unsuitable for a secure foundation, though the difficulty might be overcome by artificial means. There is no necessity, however, of incurring an obviously unnecessary expense in forming a foundation for farm buildings. A clayey substratum in front of a rising ground is not an eligible position for a site, inasmuch as it will always retain dampness, whatever may be the drainage. A very exposed spot in a gap between two hills, is an uncomfortable position both for man and beast.

It is a question whether or not it is more economical to place the buildings at the higher or lower part of an inclining arable farm. If situate at the higher part, all the produce of grain, turnips, and potatoes has to be carried up-hill; and if on the lower, the manure is subject to the same inconvenience. Where the surface of a farm forms a round-backed ridge sloping both ways, the apex of the ridge is the most economical site, and the case is the same when the buildings are placed in the centre of a long slope of land. It should not be forgotten that loads have to be carried both to and from home, so that the high or low position will answer, provided there be no steep ascent or descent immediately at the buildings. When both high and low situations are equally circumstanced, reason and experience would prefer the low.

One essential consideration should be given to all sites, which is, whether pump water is obtainable or not. Where it is abundant, some incon-

venience may be submitted to; but if scanty, the most eligible site ought to be abandoned at once.

It is desirable that the farm house should be situated so as to command a view of the fields of the farm, and also be near the barns; and if any sacrifice of position on the part of either is necessary, the house should give way to the other.

Having thus pointed out the best position for the buildings to occupy on a farm, our next endeavour shall be to lay down the general principle which should guide in the construction for every variety of husbandry.

Straw and roots being the most bulky articles in the buildings, and in great and daily use by all the stock, and having, though heavy and unwieldly, to be distributed in every apartment by manual labour, it should, of necessity, be placed centrically, and at the shortest distance from the stock. Bearing the relations of these particulars in mind, it is obvious that they constitute the principle upon which the construction of farm buildings should be based; and as the centre is the nearest point to the circumference it is also obvious that the original receptacle for the straw and roots should occupy the central point of the steading. There can be no exception to this rule for every variety of farming where straw and roots are in use. Every apartment occupied by stock should thus encircle the barn and cellars. Different classes and ages of stock require different quantities and kinds of food, so that those which require the most should be placed nearest the barn; and in all cases straw should be carried short distances, and not at all from any other apartment than direct from the straw-barn.

We shall now endeavour to illustrate this principle in its application to all classes of farm buildings. Cattle fattening, whether in boxes or stables, requiring most food, should be placed nearest the straw-barn and cellar. Younger cattle, being lighter, require less food, and should be placed either at a greater distance from the straw-barn and cellar than the fattening cattle, or at the same distance on the other side of it. Horses and cows requiring the least straw, may be placed at the greatest distance from the straw.

The leading principle involved in the above arrangement is comprehensive and simple, and is obviously applicable to every size and kind of barn. But indisputably correct as the principle is, it is very seldom adopted in practice; and we may safely assert that, the greater the deviation from it, the less commodious are the buildings as habitations for stock in winter.

After all then that has been said, illustrated, acted upon, and written about farm buildings, there is but one way of putting them together, only one method of arrangement, and there cannot possibly be any other. I do not care what the kind of farming is—whether grazing, dairy, or mixed, or in what part of the world it is followed—there is but one principle to guide all.

Take a case, applicable to us as Canadians, so that our explanations may be more easily understood. The first idea is :

Centralization.—There is more expense, more labour, more waste, and greater risks in isolated buildings than in having them together. The risk of less damage by fire, when fire does occur, with separate buildings is true, but the contingency is too remote, or at least should be made so, and cannot outweigh the others named.

One Covering.—Following in strict agreement with centralization, we must have one covering for everything—nothing whatever excepted—not even the manure ; indeed, the manure in preference to some other things needs it more. Everything under one cover adds to comfort and economizes labour, lessens weather influences—cooler in summer, and warmer in winter, and ensures a profitable collection and distribution of rain-water.

Storing of Food.—The true principle of storing is to store, not to scatter ; in this there is true economy of labour, economy of buildings, less waste, and particularly the being able to arrange the various animals *around that food according to their requirements.* Who would place a sheep nearer the store than an ox, so as to secure what we have indicated ? As the fattening steer needs more weight and variety of food than any other of our domesticated animals, why place him away from the roots, grain, fodder, bedding, and manure pile ?

Food Classification of animals.—Those eating most, such as fattening cattle, and store cattle, and so making most manure, to be nearest the food, and nearest the manure pile, so as to save labour, and those requiring most light and air ; so also

Working Classification of animals.—To be nearest the work, nearest the implements, and most "handy" for men, horses especially should be, so to speak, outside.

Health Arrangement.—Ventilation and light in individual sections, by overhead and windows, ventilation and light by two great roads crossing in centre ; an hospital for sick animals neither warm nor cold, nor with too much nor too little light, and drainage from all parts centering in tank in the neighbourhood of manure.

Preparation of Food.—Centralized as it is, with all the *green* fodder on a level with animals and all the dry fodder—hay and straw—in the barn overhead, its preparation for consumption is the next consideration. It matters not whether the food is machine prepared or not, the principle in the arrangement is not affected. Assume, however, for the sake of meeting most difficulties, that machinery is used. Steam or horse power will be necessary overhead, under cover, to drive straw cutter above, grain crusher below, and root pulper below. The lower machinery should adjoin one of the main passages for the sake of room, light, access with materials, and near to the green fodder ; the cut dry fodder drops from above into an apartment beside the feed or mixing room. In the *feed room* materials are prepared for distribution in whatever form is considered best, and, in order to assist this, as well as to be used for other purposes, the boil-house should be close at hand.

Distribution of Food.—Now comes the beauty of centralizing everything. With the feed-room now as our sub-centre, it is required to serve every animal rapidly, easily, without personal danger, and without leaving any food anywhere but in the proper place. In explaining the distribution consider that the whole mass of buildings consists of *three* sections: (1) The outside section containing some of the animals and all the dead materials; (2) the middle section containing the remainder of the animals and all the *prepared* food; and, (3) the inner section, which alone is the *store*. Between the first and second sections there is a passage having on either side *food access to every animal in the building.* Rails and a hand-car or two, if required, in this passage completes the arrangement for distributing food, with the addition of two or three shoots from above to obtain hay and straw.

Cleaning.—The animals requiring daily removal of manure, that from tied-up animals—not sheep, calves, or bulls necessarily, or at least proportionately less—are arranged in strict accordance with economy of labour, and may be done by rail, by hand, or by barrow—throwing the manure over the low fence that separates the pit from the railway.

Water and Weighing.—These should be central, and on the line of the great roads of the building, where waggon-loads, animals, or anything else may be weighed, and all live stock drink under cover. There should also be a weighscale on the track opposite the feed-room, in order to check quantity given per head when necessary.

Outside Courts.—Any number and arrangement of these are simple, and would be required for poultry, sheep, and bulls.

Aspect.—The way in which the building faces east, west, north, or south is important. Horses having to go to work early and return late, sunshine is not so material to their range as other animals that are housed all day, so, therefore, the implements and horses should have the northern aspect.

Access to Barn.—The large diameter of the building admits of an easy slope on one half of it, so that this access is under cover, and practically there need be no barn door of the present-day-style, and no opening except for ventilation. The slope of this roadway to barn will not interfere with any of the ground plan, and lands above to suit division of mows.

Plan.—The principles thus laid down are illustrated on the accompanying plans. I invite the most severe criticism upon their details. The circular form is best adapted for such an illustration, but an octagon, an ellipse, or even a square would answer, though not so conveniently. There is no reason whatever why a circular building should not serve in actual practice; the expense, I think, would be more.

Description of Circular Farm Buildings.

The principles of construction and arrangement have already been explained, and though the plan and section are plain enough it may be necessary to add some explanations.

The size can, of course, be more or less, according to requirements; in this example the diameter is 150 feet. The building is a complete circle, cut on the ground floor into quadrants by two cross-roads wide and high enough for a waggon load, and occupied at their intersection by a weigh-scale of the usual kind—say three tons maximum. Across the diameter in any direction the ground floor is divided into nine parts—that is a centre with four on each side. Entering at any of the four main doors, the first section is laid off for the lighter class of animals such as sheep, pigs, poultry, cows, and those required for labour, as horses. As a matter of convenience, the implements, manure and bulls are also in this section. Immediately adjoining this outer rim is the hand-car railway—completely round the building, having no break whatever, and forming the second section. The third section is occupied by cattle of all kinds, except cows, one quadrant being devoted to fattening stock, and the other to young cattle; another to calves, and the hospital; and the fourth to food preparing arrangements, such as boil-house, feed-room, from which all prepared food is distributed by the hand-car. It will now be observed that every animal in the building can be supplied with food, *at head*, by

this circular railway ; that hay and straw from shoots above connect with the same, and can be taken to all parts right and left. A large part of the manure can also be taken to yard by car, in addition to water and any form of material. The fourth section is the root and feed stores, with water from a well for general use—easily approached from all quarters. Light, if required at any particular point, may be secured easily, as shown in section ; ventilation is abundant with all the roads, and may be added to by over-head traps to any of the sections, as example at A on section of horse stable. The liquid from manure and all the stables is collected in tanks, so as to be entirely withdrawn or redistributed over the pile. Rain-water from the roof also is stored underground, to be utilized for any purpose. The entrance to the barn slopes from the ground level of outside wall to the centre—being an easy ascent of one in five. The conduction of light from the window dome is a special feature—that, in a smaller building, may not be necessary, but here of importance, especially as it is of some practical value to form the intersection of the cross-roads where the weighscale stands into a show ring, where, for example, a purchaser can examine any animal on a wet day. This show ring could be extended to thirty-five feet in diameter.

On landing in the barn from the sloping roadway, the horses and waggon can be driven all round between the mows—there being a centre and one side mow, that can be made into many divisions. Two granaries take up part of the outside mows, and the space above all, right up to the roof, is ample for large quantities of hay and straw ; indeed, the waggon-way itself could, in a press, be utilized for storage.

If it is imperative that the manufacturer should have extensive and skilfully designed buildings and machinery, it is equally necessary that the farmer who is determined to keep abreast of the times should have suits of farm buildings which will enable him to economise on all hands.

Model Farm Buildings in mixed husbandry should possess, amongst other main essentials

Ample accommodation.
Permanency.
Light—under regulation.
Ventilation—under regulation.
Drainage.
Isolated hospital for sick animals.
Carpenter's shop.
Water, hard and soft.

Liquid manure tank.
Rat proof walls.
Ice house.
Cellar for preserving green fodder.
Room for night watch.

The Drainage of the Farm.

IT may seem unnecessary to inquire, in the present day, what drainage really is. Thousands upon thousands of dollars are being expended on draining operations, and one may therefore be disposed to say that, had the subject not been thoroughly understood, a check would have been put upon the expenditure long ere now. But though such an inference as this may so far be justifiable, yet there are no good grounds for its being laid down and adhered to. I fear that, if the truth were told, it would be seen that drainage is not understood in the way it ought to be; and, in consequence, considerable sums of money are being expended injudiciously in the carrying out of this very important improvement. It is right that we should endeavour to find out the true meaning of the term drainage, in connection with improving operations. We may consider this important undertaking in two aspects—1*st*, Negatively, in its preventing evil; and, 2*nd*, Positively, in its effecting good.

If the soil and sub-soil are charged with water to such an extent that the whole pores and interstices are full and overflowing, it is impossible that the crops grown upon it can have even a good yield. The evils entailed upon the soil by the presence of stagnant water are of various kinds. There is, first, a mechanical injury done to it. Its particles, when they happen to be clayey in their nature, are made to cohere so as to prevent the circulation of atmospheric air in its interior. In consequence it becomes cold and sour, and is less easily wrought than it ought to be. Who has not seen an undrained clay field lying at seed-time in too wet a state to be sown, while all the drained land in the vicinity has been seeded in

a satisfactory manner, without feeling that great and permanent evil was being done to it? That water does not stagnate in the soil without making it poorer and more unproductive than it would be were it lying in a dry state. Then, as the farmer is often compelled, by the advance of the season, to work his undrained land before it is nearly dry enough, the pressure from the feet of the horses bakes it, and greatly reduces its permeability.

The soil, in this way, is injured mechanically as well as chemically, for stagnant water does a two-fold injury. Chemists tell us, that evaporation is productive of cold. Now, if a very large quantity of water is to be evaporated from the soil by the sun's rays, the temperature of the surface stratum will necessarily be considerably lowered. It takes as much heat to evaporate a cubic inch of water as would raise the temperature of $5\frac{1}{2}$ inches from the freezing to the boiling point. To evaporate an inch of rainfall from an acre of land, requires an amount of heat from the sun, which would be sufficient to raise the temperature of the dry soil of a whole acre, to the depth of 10 inches, no less than 99 degrees. When we consider that upwards of 25 inches of rain-fall are evaporated in many parts during a year, the enormous importance of under-drainage, as a means of preventing the temperature of the soil from being lowered, cannot fail to be observed. A wet soil, which must become dry in spring mainly by a process of evaporation, will always be cold; and the crops grown upon it will be later than if it were freed from its stagnant water by a system of under-drainage. Even the temperature of a district is considerably lowered by there being much evaporation from the soil. Hence the liability to injury from frosts, of those crops in late districts, that are grown in the vicinity of marshy land.

It is well known, also, that while stagnant water is a bad conductor downwards of the heat which its surface receives from the sun's rays, it readily communicates cold to the soil lying underneath. The greater part of the heat which is absorbed by a badly drained soil is radiated into space in the night-time; whereas in dry, well wrought land, much of it is stored up at a greater or less depth, and becomes useful afterwards in stimulating the growth of the produce. When there is stagnant water in the soil, there must be a development of acids, and compounds of various kinds, inimical to the health of the crops grown upon it. As new rain falls, and is mixed with the old water, a mutual decomposition and reconversion of the compound substances present, is the natural consequence; but as these mixtures are injurious to vegetable life, in a chemical sense, while the water itself is also hurtful to the land both chemically and me-

chanically, the crop at the time is checked in growth, and its harvest yield is necessarily diminished.

Such are a few of the evils entailed upon land by the presence of stagnant water. But thorough drainage, by its negative or preventative action, does away with all these evils, and increases the fertility of the soil.

The positive action of drainage is very varied in its nature. It promotes the aëration of the soil,and the circulation of rain water through its pores and interstitial canals. All the openings in the soil must be filled either with water or atmospheric air, and in displacing the former we introduce the latter. Now, in addition to nitrogen, oxygen, and hydrogen, of which atmospheric air principally consists, it contains carbonic acid, nitric acid, carbonate of ammonia, and other gaseous compounds, introduced into it by natural and artificial exhalations. As these ingredients come into contact with the mineral matters of the soil, they change their nature either by a process of oxidation and consequent reduction, or by a direct union of elements so as to effect a true chemical decomposition. Here is a field of tenacious land, we shall suppose, which has been lying in a wet unprofitable state for a great many years. In consequence of atmospheric air being excluded from its interstices, both its mineral and vegetable constituents are lying in an inert useless state. But we drain it effectually, and by an immediate introduction of atmospheric air into the openings from which the water has been withdrawn, we set afoot a series of most important chemical transformations. The vegetable matter absorbs oxygen from the air, and is gradually reduced to its elements. Some of the mineral bodies, such as those having a considerable quantity of iron in their texture, are likewise oxidized; and instead of being any longer poisonous to cultivated plants, as they formerly were, they become perfectly harmless, if not even productive of good. Then, by the agency of rain water and air, there are many inorganic ingredients which are slowly disintegrated, and their elements fitted to take part in the building up of vegetable structures. We have here a very obvious explanation how it is that wet land, rich in vegetable and mineral substances, is usually very productive for several years after being drained. Its constituents begin at once to exert an influence on growing plants; and hence, if the land be under the control of a farmer who is desirous rather to take from than to give to it, he has the power of robbing it to an enormous extent.

Rain water is one of our best natural fertilizers; and any mode of treating the soil, calculated to promote its percolation through its pores, must

be attended with great advantages. Even pure water is of much value, in conveying the elements of fertility to the roots of plants; but rain water contains ingredients which make it valuable as a direct fertilizer. It should not be looked upon as a nuisance, therefore, which cannot be too speedily got rid of, but rather as an enricher of the soil, through the mass of which it ought to percolate slowly, in order that its useful parts may be completely extracted. There are considerable differences of opinion amongst scientific men in regard to the qualities of the various enriching substances that are usually to be found in rain water; but all agree that it contains some ammonia and nitric acid, as well as other matters of less practical importance. Now, in a properly drained soil, full advantage is taken of these ingredients, in impregnating the particles, and increasing their effects in promoting the growth of plants. Indeed, there can be no fertility without rain water; and its beneficial action upon the soil and subsoil is only to be obtained by systematic drainage. "The introduction of water to a soil," says Liebig, "is, properly speaking, an introduction of alkalies." And so it is; for, on well-drained land, rain water is unquestionably a liquid manure. But it is not merely in its direct manurial and decomposing effects on the soil, that we must look on rain water as a valuable fertilizer. It carrries heat into the ground, and thus the land becomes warmer and earlier than it was before. It also washes out noxious substances, and carries them into the drain-channels, or leaves them harmless in the ground.

The power of soils to absorb moisture, in the form of dew or aqueous vapour, is greatly increased by a complete system of under-drainage being carried out. And there can be no question whatever, that the land which absorbs most moisture from the atmosphere, is usually the best adapted for the production of crops. "The power of soils to absorb water from the air," says Sir Humphrey Davy, "is much connected with fertility. When this power is great, the plant is supplied with moisture in dry seasons; and the effect of evaporation in the day is counteracted by the absorption of aqueous vapour from the atmosphere, by the *interior* parts of the soil, during the day, and by both the exterior and interior during the night." It is only these soils, of course, that are finely comminuted to a considerable depth, that absorb the largest quantity of moisture; and hence the necessity for under-draining being followed up by a deep and thorough system of cultivation.

We see, therefore, that, in inquiring what drainage really is, we discover that it is an operation upon the soil, calculated to remove superfluous water, to the depth of the stratum in which the roots of cultivated plants

are likely to ramify. When we endeavonr to ascertain what it actually does, it becomes obvious that it is an improvement which, if properly carried out, will both prevent evil from being done to the soil, and prove a carrier of fertilizing substances into it, through the instrumentality of rain water and atmospheric air.

COMMENCING DRAINAGE WORKS.

As a preliminary to its being brought into a maximum state of fertility, every kind of bibulous soil requires to be thoroughly drained; and, with clays, drainage is, in all cases, an absolute necessity. Even on soils that are comparatively porous, great errors have been committed in forming drains at too wide intervals; and, in heavy land, the mistake, if fallen into, is immensely greater. For the sake of an ill-judged economy, we are, in many cases, tempted to put in drains at great distances apart, believing that depth will compensate for width. Than this, there can be no greater mistake; and, however carefully it should be avoided in soils of medium quality, it ought to be still more so in strong clays. So great is the affinity for water evinced by heavy land, that it requires the drains to be placed at very frequent intervals, in order to its being made sufficiently dry, and capable of being profitably cultivated, The depth of the drains, on such soils, is a matter of less consequence than their distance apart; but there are, notwithstanding, various theoretical considerations which go to prove the value of deep over shallow drainage, even in the strongest clays. In a dense, unctuous soil, the pores and interstitial canals are of much smaller sectional area than those of light land; and hence, in the former, a greater perpendicular weight of water is necessary to overcome capillary resistance, than is required in the latter.

I have said, that so bibulous are ordinary clays, that it is only by drains placed very closely together, that completely effective drainage can be secured. I do not refer to the clay of any particular geological formation, but to all heavy land containing more than 30 per cent. of pure clay, so called, and less than 5 per cent. of lime. Any one acquainted with the drainage systems which have been adopted in past years must be satisfied that a very small part of the strong clays that have been drained, have, in reality, been effectively dried. They have, in too many instances, been brought into that tough, soured state that half-drained, heavy land assumes; and are, therefore, not only ill to work, but when under green crops, are, in wet seasons, far from being so productive as they ought to be. But this is an evil that may surely be avoided; and, though the cost of

draining clays, in a satisfactory manner, should be more than the rates commonly thought of, the question of ultimate profit is the principal one to take into consideration. Clays are intrinsically of greater value than light soils; and, though the expense of gaining access to their organic ingredients is greater in the former than in the latter, yet they are worth all the additional outlay.

DRAINAGE OUTLETS.

In commencing drainage operations on any kind of land, the very first thing requiring attention is the improvement of the main water-courses into which the covered outfalls are to be discharged. If a sluggish river or a dead-level ditch, half-grown up with rank vegetation, is to be left undeepened when adjoining fields are being drained, then the probability is, that the outlets which are now formed but a few inches above the level of these imperfect water-ways, will, in a few years, not only be grown up, but back-water will injure the whole inland operations to such an extent, that the drains will cease to be any longer effective. Though "prevention better than cure" may seem a very trite motto, yet it really ought to be more attended to, in its practical application, to the carrying out of drainage works, than it usually is by improvers. The whole value of the outlay on draining will frequently be found to hinge on the completeness of the river and ditch outfalls as actual discharging water-channels. Whatever the really necessary expenditure may be, it is unquestionably a matter of the first importance that means should be adopted, to clean out and straighten crooked water-ways, and, if at all possible, add to their discharging capacity, by increasing the descent of the channel, which is to be specially relied on.

There are some kinds of undrained land, however, which, though not situated on the banks of a river, can yet be drained properly only by the application of a great amount of skill and expense in the formation of suitable outfalls. Take some of the flat-lying land in Ontario; and just consider, for a moment, how impossible it is to drain them either three or four feet deep, unless some extraordinary expensive provision is made for the securing of a proper outlet. It is no uncommon thing to see a sheet of really good land, extending to many square miles, which seems to be so dead flat and completely water-logged, that it is next to impossible to drain it. But the impossibility is only imaginary after all. It is a mere question of skilful application of means, that is necessary to dispel the phantom. *There is no land in the world so perfectly flat, that water will not run away from it in properly cut channels.* There may be spots

that are perfectly dead level ; but the fall on contiguous pieces of ground, if taken advantage of, is generally sufficient to make water run. The plan to adopt, therefore, in draining long level flats of country, is, to go far enough down the descent, and bring up a main level, so accurately cut that no fall has been lost. This will, in most instances, give the required facilities for getting rid of the water discharged by the under drains which must then be formed. I may be told that this will be costly. And so it will ; but in those districts where the value of the soil is kept at a very low figure, when it might soon be largely increased by the removal of stagnant water, the question of expense, or mutual arrangement between neighbouring farmers in respect thereto, is not the primary one. Only convince the owner of such land that it is quite possible to drain it, and he will soon find out that the improvement can be effected, so as to leave him ultimately a good profit on the undertaking.

At all times, the aim in carrying out drainage works should be to give at the first deep and suitable outfalls ; and afterwards, too much care can scarcely be exercised in keeping the open ditches and outlets free from impediment of every sort. Once let the chief outfall become gorged or ineffective, and, of necessity, the whole drainage works are likely to suffer damage.

DEPTH AND DISTANCES APART OF DRAINS.

We have yet to find out how deep and how far apart the drains require to be in ordinary cases, to afford complete drainage. It is difficult to determine how deep the roots of most species of our cultivated plants will go, if unobstructed by noxious water or impenetrable layers of clay. Experience has proved that the roots of cereals and clovers will descend at least three feet into a porous good subsoil, and mangold-wurzel extends its fibres to a distance of four or five feet in all directions. There is, therefore, no exaggeration in taking three feet as the depth to which all cultivated soils should be dried. If it is supposed that drains three feet deep will be sufficient to secure this end, the sooner the impression is given up the better. In all cases, the law of capillary attraction comes into operation, and limits the action of the drains by at least six or eight inches. When one puts the edge of a piece of blotting paper into water, the effect of this attraction or imbibition is very well seen. Now, in the soil the same process goes on, only the earth and clay are less bibulous than the paper, and draw up the moisture to a comparatively limited extent. The same law may be observed in operation when we fill a series of small tubes with water. In the tubes which have the largest calibre—say that

they are half an inch in diameter—the water will be observed to have a slightly concave surface, that on the outer edges being attracted up the sides of the glass a little. With tubes much smaller, this peculiarity will be still more distinctly seen; and with those that have so small internal openings, that they only admit a fine wire, it will be found that the water will not even run through them, if they are in short length. The whole opening is charged with liquid; but, in consequence of the attracting or retaining power of the glass walls, it is in a state of rest; and to overcome this *vis inertiæ* by natural means, we require to add pressure from above, by *increasing the length of the tube*, and filling it to the surface. From the nature of the air canals which exist in the soil, we are justified in comparing them to an extensive series of vertical and crooked or diagonally arranged tubes bundled together, with their mouths at the surface and their exit openings a little above the level of the drainage channels. If the drains are shallow, these tubes must of course be short; and the head pressure being less than if they were long, they will necessarily evacuate the water more slowly than if they were longer. This theory is completely borne out by practical observation; for, in most cases (other circumstances being equal), *deep drains run sooner and faster after rain than shallow ones.* And, as the pores or tubes of dense soils are more minute than those of light or open land, and will therefore require to have increased head pressure to promote the free circulation of water, the theoretical reason comes out, how it is that drains *require* to be deeper in clayey ground than in any other kind of soil.

We often meet with practical farmers who assert that, if four-feet drains are adopted on heavy soils, the rain water falling upon the surface will fail to reach them. They suppose that most clays are so impervious, that water cannot percolate through a stratum four feet thick. Now, I admit at once, that there are clays to be found, which are so plastic and so dense when trodden upon or pressed in any way, that even an inch in thickness will hold a pool of water for a considerable time. I have seen a quantity of water standing in a clay furrow for weeks together, with an excellent pipe-tile drain underneath, having only six inches of cover. Not a drop found its way into the drain from the pool above; and, had there been a layer of clay but two inches thick, I believe the result would have been the same. What inference, then, are we to draw from this fact? Are we to argue that drains six inches deep are not shallow enough to permit the free percolation or water from the surface of dense clays? If six-inch drains are too deep in some cases, what other depth can we make them, to insure their efficiency? We see at once, therefore, that, if

we object to deep drains in clays, simply because the water will not get down to them; the objection applies eqally to shallow drainage.

There can be no necessity for denying the fact, that neither shallow nor deep drains will work well at the first in strong clays, if the surface has been much wrought upon; and that even in any case, deep drains will not become effective quite so soon as shallow drains will. The pores and interstices of the soil which have hitherto been filled with stagnant water must be emptied, and the land acted upon both by frosts and drought, ere the percolation is fairly begun. There are many cases in which the deep drainer, applying his principles to the dense clays, is disappointed to find the drainage less complete for a time than he had been led to expect. He is consequently sorely tempted, at times, to come to the conclusion, that deep drains will not work in the clays at all; and he is, therefore, inclined to revert to the shallow draining system. Now, there are several causes why deep drains fail at first to lay clay soils quite so dry as they ought to be. Perhaps they have been put in at a wet time of the season, and the material filled in above the pipes being little else than mud, it *may be years* before the weather has much effect in making it become porous. We have elsewhere pointed out the necessity for drains being formed when the soil is tolerably dry; but, if this cannot be attained, care should at least be taken to keep the covering of as dry material as it is possible to obtain. But the defective action of deep drains may also be the result of unskilful management. The fact requires to be kept constantly in view, that water cannot flow right and left towards the pipes on a truly horizontal plane. It is along a sloping line that it must gravitate in the direction of the drain; and, if the soil is very dense, the fall upon this line must be greater than it would require to be in porous land. If we put in drains at too wide intervals, these oblique water lines may come to the surface without crossing or meeting each other, and hence the reason why, in some cases, where the soil is imperfectly drained, a wet strip is seen half way between the drains. It should also be remembered that land usually subsides considerably after being drained, and consequently those which are put in 4 feet deep this year, will not be more than 3 feet 8 inches deep five years hence, and will, perhaps, be even 3 or 4 inches shallower in other five years. This partly arises, no doubt, from the surface soil being carried off by water, and by the crops that have been grown, but the subsidence of the land is the main cause of the alteration. There may, however, be another agency at work. Everyone knows that lime, and other bodies that are heavier than soil, have a tendency to sink when placed upon the surface. And if we apply the principle conversely, we

may find that drain pipes filled with air, being lighter than soil, will have a tendency to rise towards the surface. Whatever the cause may be, the fact requires no proof, that after ten or twelve years, drains are found to be 6 or 7 inches shallower than when they were formed. And as drainage is generally intended to be a permanent improvement; as deep drains permit a greater depth of soil and subsoil to be exposed to the action of the air than is possible with shallow drainage; and as a much deeper and more effective system of cultivation than that presently in use is advisable in many instances; from all of these reasons, as well as others that might be stated, I hold that drains should be made as nearly 4 feet deep as possible.

There are various circumstances, no doubt, which ought to modify in practice any general rule of this kind. Perhaps it is impossible, except at an enormous expense, to get an outfall sufficiently deep to admit of the drains being made 4 feet. And, in other cases, an immediate return on a very moderate outlay may be wished; and for this purpose, shallow or 30-inch drains will be preferable. In some instances, particularly in very dense tenacious soils, it may be advisable to put in only 3½ feet drains. The drainage lines must be kept so near to each other, in order to lay land of this kind dry, that the workmanship connected with 4 feet drains becomes very heavy by the acre. To obviate this evil, there is no alternative but that of reducing the depth, and bringing the drains a little closer together. If this is done in a skilful way, the drainage will prove perfectly effective, though scarcely so complete as it would have been with 4 feet drains having the same, or very little greater, distances between them.

Far greater errors have been committed in regard to the distances apart of drains than as respects their depth,

Rules applicable to every case cannot be laid down; but I can state general principles, in reference to the distances at which drains should be placed in soils having specific characters. In very close clays, for example, 4-feet drains should be from 18 to 25 feet apart. If the depth is reduced by 6 inches, 18 to 21 feet will be wide enough. Then, on more porous though still rather tenacious land, 25 to 30 feet intervals do very well, when the depth is four feet; and on very porous soils, 40 to 50 feet, and even still greater widths, will be sufficient. In many instances, a few well-directed drains will remove the injurious spring or pent-up waters from a large extent of land. The piece of ground to be operated upon in this special way, mostly requires a careful inspection, and to be treated ac-

cording to the peculiarities it may present; so that it is scarcely possible to give a rule invariably correct when applied to practice.

MAIN DRAINS.

Having ascertained what depth and distances asunder the ordinary surface-water under-drains in any particular field ought to be, the carrying out of the works will next demand attention. In laying down the main and furrow drain lines a levelling instrument should always be used, if there is the slightest doubt about there being a good declivity on the surface. This is more particularly necessary in the formation of the outfalls. In very flat ground, it is sometimes a most difficult matter to get sufficient declivity to insure a self-cleansing action. As the usefulness of most drainage works depends very largely on the proper formation of the discharging outlets, no reasonable amount of expense should be spared in making these as complete as possible. If they are to be open, the sides of the cutting should be formed at an angle of 45°; and if the material is very liable to slip, an angle of 40°, or even less, will be sufficiently steep. All the excavated soil should be thrown well back from the edges, as it will have a tendency, if left too near, to make the sides give way. When the cutting is too deep to be left open, horse-shoe tiles, or circular pipes of large calibre, should be laid in it. It is rarely advisable to lay several open tiles abreast or atop, as the sides obstruct the water, and silt is deposited, with considerable injury to the drain. To save a little expense many drainers commit the serious mistake of not going far enough down the fall to secure a deep and effective outlet; and others put in pipes that are much too small for the work they have to perform.

It requires some skill to arrange the main drains in a field, so as to catch every hollow in it, without adding considerably to the cost; and it also needs much care to keep the levels properly, in cutting the drains. When the main drains are very long, they should have overflow branches at various points. Suppose, for example, a drain four feet deep runs parallel with an open ditch which is fully three feet in depth, then it is obvious that, if a few branches be carried into the latter, the pressure on the main during great floods, supposing it incapable of venting the water, will never be more than from a foot to a foot and a half. This can only be done, of course, when there is an open ditch, into which the overflow branches may be carried. At important junctions, and in places where there are sharp curves, there should also be sediment wells in the main drains, each

covered by a stone placed far enough below the surface to be out of reach of the plough. All important discharging vents should be provided with stone or cast-iron ends, and light gratings or a wooden box, in districts subject to extreme frosts, the ordinary tile being liable to crumble away. Each outlet should be numbered and registered in the regular drainage book of the farm. How often do we see the mouths of main drains laid into open, imperfectly cleaned ditches and no means being taken to mark their positions, they are soon overgrown, and, perhaps, stopped up altogether.

If the main drain discharges itself into an open ditch, there ought to be a drop of from nine to twelve inches; and, in every case where it is possible to obtain it, the main should be four to six inches deeper than the side drains. The latter ought to join the former, not exactly at right angles, but with a slight turn in the direction of the fall. And the workman who lays the pipes, should be most careful to cut a large enough opening in the main to vent all the water discharged by each side-drain, and then to pack the joint all round with stone chips.

LATERAL, SIDE, OR FURROW DRAINS.

In laying out the side drains, in lands which can only be dried by the parallel system of drainage, there are certain general rules which require to be observed. If the ground is lying in narrow, round-backed ridges, it may save considerable cutting to put a drain into each furrow. But, in many cases, there will be no saving effected, in the aggregate, by adopting this plan. More pipes will be required to drain an acre, than would be necessary with the drains placed at regular intervals; and hence the amount saved on the cutting is lost on the material. It is the duty of the person who gives advice in regard to the operations, to estimate the comparative cost, under each system; and, keeping both cheapness and efficiency in view, he ought to act according to the best of his judgment. In general, it will be found advisable to pay very little attention to the old furrows. Let the drains be laid off at regular intervals, to suit the nature of the soil, and carried through either ridges or furrows, as they may come in the way. The fact ought always to be kept in view, however, that, with this mode of draining, it is necessary subsequently to combine a levelling process of the soil. Rain-water should not be allowed to run along the surface of the ground, and descend immediately above the pipes. Wherever it falls, there it ought to descend, and then find its way laterally to the drain channel on either side. On well-drained land, there ought to be

no high ridges, with deep, open furrows between. The surface should be nearly level. Though, in one respect, it is a matter of very little importance whether drain-lines are straight or crooked, yet, in another light, it is advisable that they should be as free as possible from bends. When a a plan of the drains is kept,—and on every well-managed farm, the drains will be accurately mapped—it is a very simple matter to find out any part of a straight drain that may have gone wrong, by merely running a line between any two points of it. Now, in a crooked or badly laid out drain, this is not so easily done; and, as it does not add to the expense of the workmanship, there can be no objections to a straight line being preferred. It is well, also, in cutting the drains, to keep the face as to slope, the same on both sides. If one side is cut so as to overhang the drain, the chances are, that, if the soil is slippery in its nature, and the weather wet, it will give way, and fall in. And, besides, it is always advisable to lay down a standard of excellence for the guidance of the workmen, and encourage them to aim at reaching that standard. Inferior drainers are generally as defective in the formation of the bottom of the drain, as in the cutting of any other part of it. In all cases, the bottom should be the exact width of the pipe to be laid in it; but very often it is far wider than it ought to be. The result is, that the pipes roll about too much, and, of necessity, collars must be used in order to keep them in line. Surely it would be much better to make the solid soil act as a collar; and this end is completely attained by keeping the bottom the exact size of the pipe. Should the subsoil be too hard to admit of a narrow neat bottom being formed, then the pipes may easily be kept in line by carefully packing the sides with bits of clay or stone.

In flat lands, the efficiency of the drains depends very much on the accuracy with which the levels are kept. There should be no pools of water in the bottom of a drain. The workman ought to be such an adept in the use of the cleaning tools, that the bottom, if even very nearly dead level, may have no standing water in it. A great many drainers can judge very accurately in regard to levels simply by the eye; but a far greater number are altogether deceived by it. Hence the reason why the drainage engineer meets so frequently with workmen who will persist in affirming that there is no declivity upon the land, and that, in consequence, they cannot get the drains to the depth, while, all the time, it is merely their judgment that is at fault. This is frequently very simply proved, by making a little dam in the bottom of the drain, and showing that, before the water has extended a certain number of feet along the channel, it has overrun a bank of so many inches, representing the fall in

that distance; hence, one of the best guides in cutting a drain is to observe whether or not the water (when of course there is any), *leaves you as the work progresses.*

The kind of draining materials to be used, must depend very much on the comparative prices at which they can be obtained in the district; but, other things being equal, circular pipes inside are preferable to any other kind. As the water runs in a contracted channel, there is less chance of a pipe-drain being choked by the deposition of sediment, than there is in the case of horseshoe-shaped or flat-bottomed tiles, in which the water is so much spread that it has not the power of washing away a deposit. The sizes of the pipes should be determined according to the estimated discharge from any particular field about to be drained. In long drains a larger sized pipe should be laid at the lower than at the upper ends. For 150 yards, at the highest part of each drain, 1½-inch pipes will be found suitable; but, if there is likely to be much water, 2 and 3-inch pipes are small enough for the principal parts of the drain. Wherever the bottom is soft or uneven, it will be advisable to use collars; and in that way, a smaller sized pipe will do than if there were no collaring—only it is certainly advisable, as I have already said, to make the soil collar the pipe, in all cases where this may be practicable.

Care should be taken to lay the pipes as soon as possible after the drain is cut. The bottom is liable to become soft, and be more or less covered with mud, if there is any considerable delay. In putting in the pipes, it is advisable, in wet weather, to keep closely up to the drain-cutter; and the laying work must be done by day's wages, and not by contract. No drain ought to be laid till the owner is satisfied that it is rightly formed; and, after the pipes are put in, he must inspect them very carefully before the filling is commenced. Should he, in making this inspection, observe any open joints in the tiles, he should lay a small piece of stone upon it.

There are various modes of filling the drains in use in different districts. Some persons will allow nothing but a paring of the surface sward to be laid next the pipes; others prefer broken stones, or gravel; and a third class consider clay the best of all coverings. In respect to the use of surface soil, it may only be remarked that, as it is a dirtier substance than clay, and fouls water much more than it does, it is not a suitable covering. Water, in passing through it, is likely to carry more injurious matter into the pipe-tile beneath, than would be the case were there a clay covering. The loss resulting from the removal of the soil from the surface is not inconsiderable; and, besides, water does not percolate so readily through

it as it would through the ordinary kinds of bottom clay. A layer of broken stones, or any other porous material, over the pipeage, is not to be recommended, when only surface water is to be got quit of. It is imagined by some persons, that such a covering facilitates the admission of water into the drain; and so it does, no doubt, but there is little advantage in this. I have said already, that water should be allowed to percolate slowly towards the drains, that thereby its fertilizing ingredients may be thoroughly extracted. But, if the water once finds a way amongst these stones, it will run along the surface, and descend in little streams, each of which will carry more or less earthy matter into the drain. In practice, it has often been found that, in strong subsoils, the interstices of stones or gravel, employed in this way, were soon silted up, and, in consequence, the covering became more dense even than it would have been had it consisted only of clay. Perhaps, the best covering that can be used, is one formed from bottom clay, where that can be obtained. If the subsoil is soft, the work may be done in this manner. A man, with a sharp, light digging spade, begins at one end of the newly laid drain, and pares off a slice of clay a few inches above the pipe, first on the one side and then on the other. As the one slice overlaps the other a little, and the lower ends are not completely severed from the side, but only broken down, as if hinged to it, a solid roof of about 1½ inches in thickness, is provided. During this operation the man walks on the top of the paring, and gives it, all along, such a pressure with the feet as his weight affords, but nothing more. Besides providing an excellent shoulder over the pipe, on either side, this roofing acts as a filter, and prevents the entrance of mud. When the clay is too hard to be cut with the spade, it is just as well, perhaps, to lay a row of the more solid bottom pieces on the top of the pipes, and some fine material over it. But, indeed, if the clay is filled in just as it comes out of the drain, it will do quite well, if no large voids are left. Some saving may often be effected by employing the plough, to assist in the filling operations. A large wooden mould-board should be fitted on for the purpose; and, by using a long double-tree, one horse may walk on the one side of the drain, and the other on the other.

On the completion of every kind of drainage works, means should at once be taken to have the lines of drains all accurately laid down upon a plan, having a scale of not less than 100 feet to the inch. The plans connected with each farm ought to be bound up as a book of reference. By having alternately a leaf of drawing paper, on which the drain lines are delineated in strong blue, and a leaf of writing-paper containing all necessary particulars.

PRACTICAL BENEFITS DUE TO LAND DRAINAGE.

Let us summarise the foregoing with a few notes for more convenient reference:

It has been shown that, so far from robbing the soil of that indispensable substance, water, the benefit of drainage is due to the complete realialization of the rainfall. The practical advantages which naturally spring out of the explanations already given will be almost anticipated. Taking the case of a soil in which the stagnant condition of the water has been converted into a condition of movement, it will be found that the following substantial advantages are reaped.

1. *An earlier Harvest.*—In some cases drainage has made a difference of a fortnight in the ripening of crops. An early harvest is certainly an advantage, especially in the northern districts, where a late harvest is apt to be interrupted by bad weather, and I am sure that the season of 1883 in Ontario will mark an era in drainage operations, because much rain completely prevented cropping on undrained farms, while those adjoining that were underdrained and comparatively unharmed. An early harvest also gives facilities for autumn cultivation.

2. *A more abundant Harvest.*—This is a general result of land drainage. In some cases the entire yield may be said to be due to the operation. Where ordinary tillage lands have been well drained, the advantage has, in many cases, been estimated at 8 bushels of wheat per acre.

3. *A better quality of Produce.*—A more wholesome condition of soil naturally causes a more perfect development of the plant. Thus longer straw and better filled ears are only what might be expected. The plant is better able to resist the insidious attacks of disease, and does not so readily fall a victim to mildew, rust, and other fungoid attacks, commonly known as "blights."

4. *A greater variety of Crops.*—On undrained soils, and especially on wet clays, the farmer rarely ventures upon sowing a large variety of crops. He is compelled to allow a proportion of his land to lie idle as "bare fallow." After thorough drainage, the same land may be made to grow a much larger variety of cultivated plants, such as roots, besides the cereals, and a much better and surer plant of clover. It must not, however, be thought that the character of the land is entirely changed by drainage. It is altered and improved; but a clay soil will always be critical to manage even after thorough drainage, and the degree of improvement will be found to be very various.

5. *Tilling rendered easier and less expensive.*—This is an important advantage, springing naturally out of the explanations already given. It is also due to the increase in the number of working days during the year upon drained land. On wet clay soils the farmer must wait for his land to dry. Nothing is more injurious than to attempt to work clay land when wet, and the time so spent is considered to be worse than wasted. Since drainage greatly shortens the period required to dry land, the number of working days throughout the year is considerably increased, and that strain upon the horses of the farm, so common at favourable seasons upon clay lands, is avoided. Either, then, fewer horses will be required, or those which are kept will be maintained in working condition at less cost.

6. *Applications of Manure more effective.*—There can be no greater mistake than that of applying fertilisers, *in any form whatsoever*, to wet land, and this is one of the best reasons for insisting upon thorough drainage a first step towards improvement. Neither oil-cake given to live stock, gypsum applied to the land, or top-dressing distributed over growing crops, will yield satisfactory results upon undrained wet soils, but after drainage all these means may be used with advantage.

7. *Health of Live Stock improved.*—Certain diseases are constantly associated with the presence of stagnant water. Although it would scarcely be correct to speak of stagnant water as directly causing black-leg and red-water among cattle, or "rot" among sheep, yet there can be no doubt that a wet condition of soil induces the presence of the active causes of these diseases, and that thorough drainage tends to extirpate them.

8. *The health of the rural population* has also been greatly improved in many districts where drainage works have been carried out on a large scale, and this alone is a sufficient reason for viewing the operation as of national importance.

1. Removes surperfluous water.
2. Allows free access of air.
3. Makes available materials, that were formerly useless.
4. Destroys injurious substances.
5. Saves time and labour.
6. Saves seed.
7. Pulverises and cleans.
8. Quickens the action of manures.
9. Hastens harvest.

10. Improves the nutritive value of crops.
11. Retains moisture during drought.
12. Gives a deeper soil.
13. Improve water for health of animals.
14. Removes certain animal diseases.
15. Improves the general health of the district.

The Making of Farm-yard Manure.

A FARM-YARD manure not only is unrivalled in composition, but its value is enhanced by its action on the soil during its decay. No other manure exerts such a powerful chemical and mechanical effect, and no other can be applied to all sorts of land with such positive certainty of effect. It is also found to be particularly durable in its effects, and these merits are quite sufficient to account for the high estimation in which dung is held by the farmer.

General and Special Manures.—The terms "general" and "special" are applied to manures according to the degree in which they are capable of thoroughly keeping up the fertility of land. A field from which the constituents of wheat, wool, bone, and milk, are being perpetually drained, can only be kept up in condition by the return of these in some other form. Any substance which can repair the entire loss is entitled to be called a general manure, just as milk, which is well known to repair all waste, and at the same time supply all the neeessary materials for building up the animal body, is spoken of as a "general food."

The best type of a general manure is rich farmyard dung. Such dung consists, first, of the exerements and urine of animals fed liberally upon roots, hay, and probably corn and cake. These voidings are rich in all the ash-constituents of plants as well as nitrogen. In addition, there is straw in abundance, so that well mixed and made farmyard manure, contains all the elements of both grain and straw, and is therefore well calculated to give back to a field what it has lost in the ordinary course of husbandry.

Chemical study further confirms this view, and shows that this popular manure stands forward prominently as a true "general manure."

These remarks sufficiently show the importance of farmyard manure. It is, however, well known to all practical men, that under the term dung, or farmyard manure, much comparatively worthless material may be included. The quality of dung depends upon a considerable number of circumstances, which may be thus enumerated:

1. Upon the species of animal producing it.
2. Upon the age and condition of the animal.
3. Upon the food of the animal.
4. Upon the accommodation of the animal.
5. Upon the amount and quality of the litter supplied.
6. Upon the management during its accumulation.
7. Upon its after-treatment.

The domestic animals which furnish the farmer with the most valuable portion of his manure-heap are cattle, horses, and pigs, and in rarer cases sheep. The dung of cattle forms the staple. It is generally of a somewhat thin and watery consistency, and is consequently not likely to heat rapidly, even when massed together. The cool character of cow dung is illustrated by the fact that grooms employ it to stuff their horses' feet at night for the purpose of keeping them cool and moist. Horse dung is voided in a drier state, and is therefore much hotter in its character. Horse dung is chosen by gardeners to make their hot-beds, and to place under forcing frames. If heaped together in large quantities, it is liable to a form of dry-rot or "fire-fang," which is readily detected by a white dust that soon encrusts the straws, and causes dryness and lightness throughout the mass.

Pig dung is cool in its nature, like that of cattle.

Owing to these differences of nature, it is desirable that dung should be well mixed together, and this has an important bearing upon the designing of farm-buildings.

Age and Condition of the Animal.—*Adult animals* allow a larger proportion of nutritive food-constituents to pass through the alimentary canal than young and growing animals. Phosphates are reserved for the formation of bone, nitrogen and salts for the development of muscle and blood, in the case of young animals; whereas, in mature bodies, the processes of decay and elimination keep pace with those of nutrition. *Lean* animals absorb more nutritive matter from the food supplied than those which are fat or forward in condition. Hence the dung of fatting bullocks

becomes richer as they ripen. *Cows in calf* and *in milk* are in the same condition, with reference to the food consumed, as growing cattle, for they have not only to feed a *fœtus*, but in most cases to yield a supply of milk.

Food of the Animal.—Beasts fed upon straw, or straw and turnips, furnish an inferior manure altogether to cattle receiving grain and cake. This difference is recognised by practical farmers everywhere.

The difference in value between the excrementitious residue of a ton of straw, a ton of turnips, of barley meal, of linseed-cake, and a variety of other substances employed as cattle foods, has been estimated by Sir J. B. Lawes, and reduced to a money standard. It is not necessary that these figures should be accepted as precisely fixing the commercial value of the manurial residue left by the consumption of the various foods mentioned. The figures are based upon chemical data, but in each case will require to be discounted rather heavily to compensate for the inevitable, as well as preventible, waste that always occurs.

Estimated Value of the Manure obtained by the Consumption of One Ton of different Articles of Food, each supposed to be good quality of its kind.

1. Cotton seed-cake, decorticated	£6	10 0
2. Rape-cake	4	18 6
3. Linseed-cake	4	12 6
4. Cotton-seed cake, not decorticated	3	18 6
5. Beans	3	14 0
6. Linseed	3	13 0
7. Peas	3	2 6
8. Indian meal	1	11 0
9. Locust-beans	1	2 6
10. Malt-dust	4	5 6
11. Bran and pollards	2	18 0
12. Oats	1	15 0
13. Wheat	1	13 0
14. Malt	1	11 6
15. Barley	1	10 0
16. Clover-hay	2	5 6
17. Meadow-hay	1	10 6
18. Bean-straw	1	0 6
19. Pea-straw	0	18 9
20. Oat-straw	0	13 6
21. Wheat-straw	0	12 6
22. Barley-straw	0	10 9
23. Potatoes	0	7 0
24. Mangel-wurzel	0	5 3
25. Swedish turnips	0	4 3
26. Common turnips and carrots	0	4 0

Accommodation of Animal.—In ordinary practice live stock are housed either in, (1) stalls or stables, (2) yards more or less covered, or (3) boxes. Apart from those considerations referring to the comfort and health of the animals, the effect of each of these modes of housing upon the quality of the manure is very considerable.

Stalls or stables involve tying up the animals, and as this prevents free movement, the dung is all dropped in one place, and is very imperfectly mixed with the straw. These stalls are daily cleaned, and the dung and litter should be removed and spread over an open or covered yard, to be more completely trodden down or made. Where straw is scarce or commands a high price, the system of tying up in stables is in favour, as it is economical of litter.

Boxes are highly favourable to the production of first-class manure. In the first place, they are invariably covered with a roof, which protects the dung from rain. All the moisture contained in box-made dung is therefore derived from the animal, and in consequence a less amount of straw is required than in the case of open yards. Boxes are generally devoted to fatting cattle living upon a highly nutritious diet, so that, apart from the protection they afford from rain, this constitutes another substantial reason why box-manure has obtained a high reputation.

Yards.—Of late years covered yards have been advocated, and where these have been erected, the conditions are identical with those of boxes. More commonly the yard is furnished with a shed, but is for the most part open to the sky. As cattle are only housed in winter, the season in which the greatest amount of rain or snow falls, open yards receive a large quantity of surplus water; and especially when the sheds are not spouted or troughed, the manure becomes much wasted, and the quantity of litter required to keep the cattle comfortable is greatly increased. These conditions are not at all favourable to the accumulation of really good dung, and the system cannot be continued profitably when large sums are being expended upon feeding stuffs. At the same time, it is claimed as an advantage by those who advocate fold-yards and sheds, that they enable the farmer to crush down his straw and make it into manure. In certain districts, perhaps, the "crushing down" of straw may be an advantage, but the idea now savours of the past.

Amount and Quality of Litter supplied.—This condition has already occupied us to some extent. To furnish litter *ad libitum*, so that the yards and boxes are always knee-deep in clean straw, is conducive to the comfort of the animals, but certainly impairs the quality of the manure. On the other hand, fold-yards kept in a spongy, miry condition favour the

escape of valuable materials by surface drainage and evaporation. Many good farmers endeavour to take a middle course, by allowing their courts to become miry, or the black liquid to be seen once or twice a week, before fresh straw is added. Another point of importance is the thorough mixing of the various sorts of dung. Buildings, as already mentioned, should be contrived with a special view to this end. Stables and stalls should open into, or be placed opposite, the gates of fold-yards, that the half-made manure may be spread abroad and thoroughly mixed. On no account should horse dung be allowed to accumulate in masses by itself. Pigsties should be so placed that the swine may have access to the yards, where they will not only act as scavengers, but root up and mix the manure. Pains should be taken to litter the yards evenly, and when necessary, to level the surface. Lastly, the more the yards are protected from rain and snow, the better will be the quality of the manure produced.

After-treatment.—Passing over the management of dung during its accumulation, as already sufficiently indicated, we come to the after-treatment, which must be allowed to exert an important influence upon its efficacy. The tendency of late years has been in the direction of simplifying the processes by which dung was formerly prepared for application. In the opinion of many leading agriculturists, the best plan is to haul direct from the yard or box, spread the dung on the land, and plough it in. The limits within which this method may be recommended are, during the autumn or early winter, when "long" or "green" dung may be safely ploughed in; upon stiff and deep land, that are capable of retaining the valuable matters contained in the manure, and are also physically improved by the decay of the straw and other organic matter. On the other hand, it is not advisable to plough in manure in the autumn, when by so doing it is brought into close proximity with rock, gravel, or coarse sand. When yard manure is applied in the spring it should be well rotted, so as to be at once available for the use of the crop, and to avoid drying the soil and rendering it hollow.

Changes accompanying the Rotting of Farmyard Manure.—These changes have been carefully noted by Voelcker. They consist (1) in loss of weight, which amounts to from one-third to one-half, and even two-thirds of the entire mass of fresh manure, according to the degree to which the processes of decay are allowed to proceed; (2) the quantity of valuable matters existing in a soluble state are materially increased; (3) the proportion of nitrogen, and other of the most valuable constituents, is increased. The following analysis of fresh, long manure, composed of cow and pig dung, and of well-rotted dung that had been kept in the heap

for six months, will show at once the composition of farmyard manure and the nature of the changes induced by fermentation :—

TABLE SHOWING THE COMPOSITION OF FARMYARD MANURE.

	Cow and Pig Manure long or fresh.		Well-Rotten Dung, six months in heap.	
Water,.....		66.17		75.42
Soluble organic matters,[1]....		2.48		3.71
Soluble inorganic matters—				
Silica.....	0.237		0.254	
Phosphate of lime.....	0.299		0.382	
Lime	0.066		0.117	
Magnesia	0.011		0.047	
Potash.....	0.573		0.446	
Soda.....	0.051		0.023	
Chloride of sodium.....	0.030		0.037	
Sulphuric acid.....	0.055		0.058	
Carbonic acid, and loss.....	0.218		0.106	
	——	1.54	——	1.47
Insoluble organic matters,[2]...		25.76		12.82
Insoluble inorganic matters—				
Soluble silica.....	0.967		1.424	
Insoluble silica...	0.561		1.010	
Oxide of iron, alumina, and phosphates.....	0.596		0.947	
Containing phosphoric acid.	(0.178)		(0.274)	
Equal to bone earth.....	(0.386)		(0.573)	
Lime	1.120		1.667	
Magnesia	0.143		0.091	
Potash.....	0.099		0.045	
Soda	0.019		0.038	
Sulphuric acid.....	0.061		0.063	
Carbonic acid, and loss	0.484		1.295	
		4.05		6.58
	——	100.00	——	100.00
[1] Containing nitrogen.....	0.149		0.297	
Equal to ammonia.....	0.181		0.360	
[2] Containing nitrogen.....	0.494		0.309	
Equal to ammonia	0.599		0.375	
Total nitrogen.....	0.643		0.606	
Equal to ammonia	0.780		0.735	

TO PRODUCE THE BEST QUALITY OF FARMYARD MANURE.—From what has been advanced, it may be concluded that the best quality of farmyard dung is made under cover, by fattening cattle fed upon a liberal diet, in which oil-cakes form an important item. Further, that the thorough

mixing of the various kinds of dung is most advisable; and if made into heaps and turned, that every means should be used to prevent the escape of nitrogen.

MANAGEMENT OF FARMYARD MANURE.—Air and moisture are both essential to the proper fermentation of manure. If it is too dry, it burns, gets "fire-fanged," white and mildewed; and the high temperature of the manure promotes the formation of carbonate of ammonia, which is volatile and easily escapes into the air. This occurs when the temperature exceeds eighty degrees F. But when the manure is kept moist and the temperature low, fermentation stops with the formation of organic acids which take up ammonia. The salts thus formed are present in the black decomposed dung, and the ammonia in them is in a soluble form, but not volatile. A strong smell arising from the manure makes it evident that a wasteful fermentation is going on, but this fermentation is easily controlled. A quick fermentation will be induced by placing the manure lightly in heaps so as to allow the air to get at it; a slower fermentation, by treading the manure down firmly, and a cool fermentation by keeping the heap moderately moist. Liquid manure should be used either when it is necessary to moisten the heap, so as to check excessive fermentation, or, unless it be very dilute just before hauling to the field.

Gypsum, as in the regular practice of the Ontario Experimental Farm, is added to the manure heap with the view of fixing the ammonia; but where the management of the manure is otherwise good, this is not absolutely required. Chalk and lime are found to have a very good effect in preventing escape of ammonia from farmyard manure, provided it is *fresh* manure. Applied to rotten manure, caustic lime causes a great loss of ammonia.

As far as possible the formation of field manure-heaps is to be avoided; it is best in every sense to haul the manure direct from the yards upon the land and spread it at once. The question of immediate ploughing in, or covering it, is of less consequence than has generally been imagined; but on light soils the practice of immediate ploughing under is advisable.

The Special Fertilizers of the Farm.

WHAT special manures are, generally speaking, has already been explained. They contain one, two, or more valuable constituents of plant food, but are not sufficiently complex in composition to keep up the fertility of soils. They must, however, be regarded as highly useful under the following circumstances: (1) When a soil is deficient in some particular element of fertility, as lime, magnesia, or phosphates; (2) When a crop has some particular requirement; (3) When soils are in high condition, and it is undesirable to stock them further with artificial fertility, special manures may be employed to bring out, and possibly to reduce their surplus wealth, by stimulating the growth of heavy crops.

Uses and Abuses of Special Manures.—The first two cases in which special manures have just been recommended need not detain us further. But the third case, in which special manures are employed as a "whip," requires a little explanation.

If nitrate of soda is applied to a wheat crop, the usual effect is a considerable increase in the yield both of straw and grain. Since nitrate of soda contains only one important constituent of plant food—nitrogen; and since the increased yield of wheat, owing to the application, removes from the soil a certain proportion of earthy matter as well as nitrogen, it is evident that the soil has been drawn upon to a greater extent than it would have been without the application. In this case, then, the nitrate of soda has actually reduced the stock of wheat ingredients in the soil. A soil thus treated year after year would be sooner exhausted than one cultivated without the aid of a manure of this class. This being the case, it is of importance to farmers to know how far the application of nitrate of soda is to be recommended.

If nitrate of soda were employed alone, and year after year, no doubt the land would suffer, although many years might elapse before the evil effects became apparent. It certainly would not improve. If, as is usually the case, the farmer who employs the nitrate is in the habit of applying other fertilisers, such as "town manure," superphosphates, and lime, and

also yearly consumes cake and grain upon the farm, the use of nitrate of soda becomes reasonable and right. The management is liberal and of an improving character, and the nitrate of soda only brings out the artificial fertility which comes of good farming, and does not prey upon the natural fertility of the soil. The same remark would apply to the use of other special manures, such as lime. Repeated liming, according to the old proverb, "while it enriches the father, impoverishes the son." But lime applied in conjunction with liberal management cannot be objected to on the score of exhausting the land.

Possible Limit to the Profitable Use of any Manure.—As long as a soil is deficient in a particular constituent, we may expect to see benefit from its application. If the land becomes sufficiently stocked with this constituent, we may find a change of fertilisers desirable. If a soil contains a sufficient proportion of phosphoric acid for the requirements of a wheat crop, and at the same time an excess of potash, we cannot expect a dressing of potash to be attended with any effect. A soil deficient in lime may be greatly benefited by an application of lime. But a second or third application of the same substance might produce but little effect, simply because lime had ceased to be a deficient element. Up to the present time, potash (owing to its existing in considerable quantities in farmyard manure) has not been lacking in most of our soils. If, however, from the cultivation of the potato, the growth of wool, or the sale of straw, the amount of potash became reduced below the point required, then a demand for potash salts would immediately spring up.

In the present treatise it will be impossible to do justice to the large class of materials employed as fertilisers, but our aim must be rather to indicate the principle of their action. In the last section some substances were included which could barely be considered as coming under the designation of general manures—guano, for example, often being deficient in potash. Similarly, under the class of special manures certain fertilisers approach in complexity the composition of a true general manure.

Phosphates.—Calcium, potassium, sodium, and magnesium phosphates are all of interest to agriculturists; but from our present point of view the first named is incomparably the most important. Calcium phosphate is found in great abundance in the bones of animals, and it is also widely distributed as mineral phosphate and phosphorite. It occurs in very small quantities in all fertile soils, and it forms an important and abundant constituent of the ash of all our cultivated plants. In the cultivation of such ordinary crops as wheat, barley, and oats, no constituent is more largely drawn upon except nitrogen, the supply of which is derived, in a great

degree, from the air. Thus, in the case of phosphates, we have a small supply and a great demand, and therefore, according to the *law of minimum*, the application of phosphates might be expected to be followed with excellent results.

Bones.—At the commencement of the present century phosphates were applied as bones to pastures and to turnips. They were at that time ground into inch or half-inch bones, and in the case of pasture land were sown at from 3,000 to 5,000 lbs per acre. The effects of this treatment in Cheshire afford well-known instances of the good effects of bones. In the case of Lord Combermere's estate, land was increased in annual value by this means from 10s. to 30s., and from 15s. to 40s. per acre. As a consequence "boning" became one of the best recognised methods of improving pasture-land.

The reason for these striking effects is not far to seek, for, as the constituents of bone had been constantly removed from these pastures for a long series of years, in the shape of milk and young stock, it is no wonder that they had become deficient in phosphates.

A bullock of 1,000 lbs. live weight, in store condition, contains about 50 lbs. of mineral matter, according to results obtained on a large scale at Rothamsted, by Messrs. Lawes and Gilbert. This mineral matter, we may approximately state to have been collected from (at the most) two acres of land in three years, or from one acre in six years. This would be equal to the loss of $\frac{50}{6}$ lbs. of mineral matter per acre per annum =8·3 lbs., or to a loss of 33·2 lbs. in four years. On comparing this with the amount of mineral matter removed from tillage fields during a similar period, we find that, although decidedly less, the quantity of ash ingredients removed by grass land is very considerable. If a wheat crop of 28 bushels, and a barley crop of 33 bushels per acre, be taken during four years, the straw being supposed to be returned to the land, the amount of ash ingredients removed will be about 78 lbs. Although the per-acre loss on pasture is probably less than one-half what it is on arable land, it must be remembered that too frequently pastures are left unmanured, while tillage land receives much indulgence.

There is an opinion abroad, which requires to be qualified, that grazing improves land, although all agree that repeated mowing acts injuriously. The marked effect of bones upon land long grazed, taken in connection with the figures just given, are a sufficient refutation to such erroneous views.

The effect of bones upon pastures is by no means uniform; and caution should be exercised before employing them on an extensive scale. Their

application is not always followed with a great increase of quantity; but the quality of the herbage is invariably improved by the encouragement they give to the clovers and finer grasses.

Besides calcium phosphate, raw bones contain calcium carbonate and azotysed carbonaceous matter (gelatine). The following analysis, by Anderson, fairly represents their composition:

Water	6·20
Organic matter	39·13
Calcium phosphate	48·95
Lime	2·57
Magnesia	0·30
Sulphur teroxide	2·55
Silica	0·30
	100·00
Ammonia, which the organic matter is capable of yielding	4·80

Bone-ash and animal charcoal containing from 70 to 80 per cent. of phosphates, and boiled bones from the soap-works, are largely employed in the manufacture of superphosphate.

Bones which have been deprived of their organic matter by boiling or burning are more suitable than raw bones for the home process of dissolving with sulphuric acid. They dissolve rapidly and completely, while the organic matter of raw bones carbonises and forms an imprenetrable envelope around each fragment, preventing the further action of the acid. The following plan is often pursued by agriculturists in the home process of dissolving bones: A ring of ashes is made on the ground of sufficient dimensions. The bone ash, or crushed bones, are then placed in the enclosed area, and moistened with a sixth or fourth of their weight of hot water. From a third to a half of their weight of sulphuric acid of specific gravity, 1·7, is then poured over them, and the mass is moved with rakes until the effervescence ceases. It is then allowed to stand for a few days, and if not dry enough, peat, sawdust, or any substance free from lime may be added to dry it. This process is employed by some farmers, who prefer to buy genuine bones undissolved, that they may know what they are using. Of late years, however, the diffusion of chemical knowledge has given an excellent safeguard from deception, in analysis. It will also be found that home-made superphosphate is less finely divided, and inferior in condition for drilling than that made in factories.

Ground or Mineral Phosphate—Its value as a fertilizer is derived from the phosphate of lime of which the mineral is partly composed. Coprolites, as to seventy to eighty per cent. of their substance, are a mixed phosphate and carbonate of lime.

Athough there seems to be considerable difference in the results obtained by different experiments, the general conclusion seems to be that the usual difference in the effects produced by soluble and insoluble phosphates is much diminished when the latter are reduced to very fine powder and applied in very large quantities. The powdered phosphate is cheaper than the manufactured manure. But there can be no doubt that an increased use of ground coprolites would result in increasing their cost in the market, and the advantage would thus to some extent be lost.

After fine grinding, the coprolite powder may be mixed with farm-yard manure, either under the cattle or else in the dung heap, and the carbonic acid formed by the fermentation of the dung tends to the solubility of the mineral phosphates by actual superphosphating.

The addition of superphosphate to a field acts powerfully upon turnips, and other root crops. Its effects are not very evident upon wheat, but it has been noticed to exert a favourable action upon barley, especially when late sown. From what we know of the requirements of plants, we might naturally think that turnips and barley must require a large amount of phosphates, and that wheat had not similar need. This conclusion would be erroneous. For although a root crop certainly does remove more phosphates from a soil than a crop of wheat, a barley crop, practically speaking, requires about the same amount. A fair crop of wheat, of 32 bushels, removes in grain and straw about 26 lbs. of phosphorus pentoxide from the soil. Twenty tons of turnips, with their tops, take about 40 lbs., so that a crop of turnips needs 14 lbs. more than a crop of wheat. Wheat then undoubtedly requires a less weight per acre, it is proportionately richer than turnips in this element. Why then should phosphates act strongly upon turnips and barley, and scarcely at all upon wheat? The main reason appears to be the long period during which wheat occupies the ground, and the amount of space covered by its roots. *A manure is never useful unless it is wanted,* and there is usually enough phosphorus pentoxide in good wheat lands for this crop, considering the length of time the plant is engaged in its search. The addition of more of this constituent therefore becomes superfluous in all such cases. With barley and roots it is very different. They both grow rapidly, and depend upon a thinner stratum of soil for their nutrition, hence they at once seize upon

and utilise any fresh supply of *the least abundant, and therefore most important*, of the essential ash ingredients.

The effect of superphosphate upon the root crop is certainly remarkable. In many districts 300 lbs per acre is found a sufficient application. This will represent 30 lbs. of phosphorous pentoxide, if the manure contain 20 per cent. of soluble or monocalcic phosphates. But, supposing the turnip crop yields 20 tons per acre, it will have removed 40 lbs. of this ingredient, so that it will have not only used all that was contained in the superphosphate, but drawn upon the natural resources of the soil to the extent of 10 lbs. This can only be accounted for by the increased energy conferred upon the plant, in the early stages of its growth, by the superphosphate, which gives it the power to thrive and send its roots in search of the mineral constituents native to the soil.

Although superphosphate is the best manure for turnips, it occasionally happens that it produces but little effect. The cases in which disappointments occur have been thus classified by Dr. Voelcker :

1. If the phosphates are washed out with heavy rain or undergo changes which render them ineffective.

2. If the soil contains a sufficient supply of phosphates, when an additional supply can be of no avail.

3. If the soil is deficient in potash, or other essential ash ingredients, in which case phosphates alone could not produce a result.

LIME.

Lime has already been noticed as a constituent of all fertile soils, and an ingredient of all cultivated plants. The high proportion in which it occurs in the ash of many plants is sufficient to account for its value as a manure, while its mechanical and chemical effects upon the soil enhance its agricultural value. The following plants yield a preponderating quantity of lime in their ash, and have therefore been classed as "lime plants."

PERCENTAGE OF LIME IN THE ASH OF CERTAIN CULTIVATED PLANTS.

Potatoes (stem and leaves)	46.2 per cent.	White clover	32.2 per cent.
Tobacco	67.44 "	Sainfoin	32.2 "
Lucerne	48.0 "	Alsike clover	31.9 "
Red clover	34.0 "	Vetches	26.3 "

Experiment has demonstrated that lime is absolutely necessary to the development of all plants, and the above list shows how largely it is appropriated by many leguminous and other crops.

Lime is employed with most effect (1) upon soils which are deficient in it; (2) upon stiff clays; (3) upon peaty soils, or those containing a large amount of undecomposed vegetable matter. It does not act energetically upon light soils. Again, on old tillage lands, especially those which have been frequently limed, it exerts but little effect; while upon newly broken up lands it is highly efficacious. There is a general opinion among practical men that lime should be in a highly caustic condition if applied to old tillage lands. Three, six, and nine tons per acre may be considered respectively to represent light, medium and heavy dressings per acre, and the effect is supposed to last about twelve years.

Lime is applied in two conditions—raw and prepared. When applied as marl or chalk, it may be spoken of as raw or crude; when subjected to burning or calcining, as prepared.

Marl has already been defined as a mixture of clay and lime. It no doubt acts beneficially by virtue of both ingredients. Sandy soils have in many cases been greatly improved by the application of "marl" dug from the pits and spread upon the surface. It occurs as blue, gray, red, and yellow marl, of which the first and last are most valuable, and it is applied at the rate of forty to eighty cubic yards per acre. The composition of marls is very various, some containing eight and others eighty to ninety per cent. of lime. They have been classified, according to composition, into true marls, or those in which calcium carbonate predominates, and clay marls, or those in which clay is the chief constituent.

Gypsum (calcium sulphate) is another form in which lime is employed as a manure. It is occasionally applied at the rate of from 200 to 500 or more per acre to clover and other leguminous crops. It may also be employed to fix the ammonia in ordinary farm yard manure, by scattering it over the floors of stables and upon manure heaps. Gypsum is an inseparable ingredient of all superphosphates, in which it exists as one of the results of the application of sulphur teroxide to phosphates abounding in lime. A dressing of 500 lbs. per acre of a good superphosphate necessarily involves the application of about 200 lbs. of gypsum.

Common salt (sodium chloride) has long been employed as a manure. It may be recommended especially for mangel-wurzel and wheat, and may be applied at the maximum rate of 500 per acre. The effect produced depends much upon the character of the land. Upon stiff and cold soils it is least effective, while upon warmer and dryer soils it is often beneficial. Common salt may be used with good effect upon pastures which carry a coarse herbage, and is useful to mix with nitrate of soda as an application for wheat. It checks the disposition of the nitrate to un-

duly promote the growth of straw, and effects a more thorough distribution of the nitrate by increasing the bulk of the dressing.

Fish Refuse contains nearly two per cent. of nitrogen, and one per cent. of phosphoric acid. It answers well as a manure for both wheat and root crops when made into a compost with its own weight of soil, and allowed to decompose before being applied. Fish guano is a manufacture of the refuse from oil-pressing and fish-curing establishments by pressure and treatment with sulphuric acid.

Bullock's Blood is used on a large scale as a manure, but chiefly for mixing with other fertilizers. In its natural state blood contains about three per cent. of nitrogen; when dried it contains about twelve per cent. It makes an excellent manure for turnips when mixed with bone-dust or phosphatic guano; and, mixed with peat or mould, may be very advantageously applied as a top-dressing to wheat crops and to grass land.

Sea-weed is largely used as a manure on some parts of the coast. It is especially suited for the potato crop, which requires much potash—a large mineral constituent of sea-weed. Sometimes it is used as a top-dressing to grass land. The action of sea-weed is the same as a green crop ploughed in. It contains all the ordinary constituents of land plants As it putrifies rapidly, it forms a quick manure. It is applied at the rate of twenty to thirty tons per acre. The usual practice is to spread it on the soil and plough it in; but it is occasionally formed into a compost with earth and dung. The neighbourhood of the coast is in some districts a distinct element in the value of the land, on account of the sea-weed as a manure, which is thus more cheaply obtained.

Sewage as a Manure.—The difficulty in the way of its use is its enormous bulk in proportion to its valuable constituents. A ton of city sewage ordinarily contains only three pounds of solid matter—viz., one pound of organic and two pounds of mineral constituents, the former yielding less than three ounces of ammonia, and the latter half an ounce of phosphoric acid and one and a half ounces of potash; so that in a ton of sewage there is only about five ounces of fertilizing matter. One ton of guano may thus contain as much of the food of plants as twelve hundred tons of sewage. According to the market price of the former the theoretical value of the sewage ought thus to be about five cents per ton. Practically, however, there is no comparison between the values of the two manures; because it is found that ten or even twenty times the theoretic equivalent of sewage is required to produce the effect of guano; and considering the far greater cost of utilizing the sewage, only a nominal price can be put upon it.

There are several methods of utilizing sewage:—

Irrigation is the method which has been most largely practised. It consists in distributing the sewage over the surface of well-drained fields, from reservoirs into which the sewers empty, or into which their contents are pumped.

In the dry-earth system the sewage nuisance is dealt with house by house. Dry pulverized earth in movable boxes in privies is made the receptable in which excreta are covered and rendered harmless, being still serviceable for gardens and fields. The system, fit enough for institutions where discipline prevails, is hardly applicable to large towns, where it would entail the bringing in dry earth to the amount of from five to ten pounds for each individual daily.

Composts may be defined as the collected rubbish of the farm mingled with lime, in the proportion of about five to 1.

Trimmings and clearings of ditches, garden "rubbish," road scrapings, stinking stuff from pond bottoms, dead animals, anything in short, of vegetable or animal origin, may be converted into valuable manure. There is no better sign of tidy and thrifty farming than large collections of such like materials on roadsides and vacant spots.

When composts are formed of dead animals, or of animal matter, such as refuse from slaughter-houses, fisheries, etc., lime should be avoided, and earth alone be used to prevent the escape of ammonia.

Green Manures.—This is the term given to crops which are grown for the purpose of being ploughed in on the land which produced them. This was once a common practice in England, and still is in some parts of America, but the availability of commercial fertilizers, combined with the high prices obtainable for beef and mutton, has rendered the farmer more careless than he once was of the slower and more natural methods of maintaining or increasing fertility.

By ploughing in a green crop, the surface soil is enriched not only by the elements which the crop derives from the air, but also by mineral and vegetable matters which is brought up by it from the subsoil. The green crop thus acts the part of a gatherer of plant food, and makes it easier for any crop sown after this green-manuring to get its supplies from the decomposing vegetation present in the soil.

The plants best adapted for green-manuring, are those which derive their support principally from the air, which grow rapidly, which cover the ground well, and whose roots penetrate deep, and ramify extensively throughout the soil.

Among the various plants grown for green-manuring are, buckwheat, rye, rape, and common clover. Many of these crops, when ploughed in green, are, weight for weight, almost as good as farm-yard manure, containing large quantities of nitrogen, phosphoric acid, and potash. The great weight of decomposable vegetable matter contained in the root as well as the leaf of a crop, grown for being ploughed in as manure, is to be considered in estimating its effect as a fertilizer. There can be no doubt that to this especially is due the fertilizing effect of a clover stubble when ploughed in as a preparation for the following wheat crop. Eight to twelve tons per acre may be grown of any of the crops we have named, with the aid of a special fertilizer.

Green-manuring produces the greatest effect on light sandy soils in dry climates; hence its more common use in the United States and Canada than in Britain; but it is profitably practised also on heavy soils. The green crop should, if possible, be ploughed in just before the time of flowering, or at all events after it has arrived at considerable growth. The season of the year for ploughing in must depend upon the nature of the crop; but the operation is best performed in the heat of summer, as the conditions for rapid decomposition are then actively present, after the plants are turned in. To cover them effectually, they require to be first heavily rolled. A skim coulter should be used in the plough that is used, and the ploughing should be deep enough to retain moisture about the decaying plants.

The Liquid Manure of the Farm is the drainings or the washings from the farm-yard manure. The best use that can be made of it probably is to return it to the dung heap, where means should be devised for its absorption or retention. If allowed to flow away from the cattle sheds or from the manure pile, it should be collected in tanks. From the collecting tanks it may be distributed over the land by a watering-cart, when the area is small. Liquid manure is chiefly valuable for the rapidity with which it produces its effect. It is well adapted to light sandy soils, but a failure on heavy clays. It is also more suitable for grass and root crops than for grain crops. By its use grass may be cut six or eight times in the course of a year.

The Application of Special Manures.—The tendency of modern practice in manuring is to use readily soluble and quick-acting manures but to use them sparingly at a time. Little and often is the rule.

In applying fertilizers of a soluble character, it is found economical to manure the plant rather than the soil. The practice is especially applicable to mangels and other drilled crops, where the plants are a consider-

able distance apart in the rows. The manure is deposited by the drill along the line of each plant row, and immediately covered in. Manures which are not so readily soluble produce the best effect when intimately mixed with the soil. The depth to which the manure is turned in should be regulated by the nature of the soil and of the manure. On a clay soil it may be buried deeper with advantage than on a sandy soil; and a slow manure may be buried deeper than a soluble and quick-acting manure. It is not, however, good policy to bury any manure very deeply. The rain in a drained soil will soon distribute it throughout the mass to be fertilized; and we must not forget that the producing power of a soil is governed more by the mass of its vegetable bed than by the measure of its superficies; and where the subsoil is unmanured the crop will often be underfed. One of the causes of the failure of red clover is traced, we believe, to the dying off of the roots when they penetrate beyond the depth of available manure. Soluble manures, like nitrate of soda and sulphate of ammonia, should be put on the surface; but undissolved phosphate, and even guano, is best when just covered with the soil. Stiff clays are immensely benefited by a good dressing of *fresh* farm-yard manure ploughed under to a tolerable depth.

Top-dressings with artificial manures are chiefly to be recommended for crops in the grassy stages of their growth—wheat crops in spring, and grass lands at the same season, and especially in wet seasons. In such seasons one objection to this method of applying manure to wheat is the tendency which it produces in the crop to lodge. Salt will partly counteract this effect, and it does so by strengthening and to some extent shortening the straw; *but* this is to counteract one of the principal objects of top-dressing. On clay soils, which produce strong straw, the tendency to lodge is less than on lighter soils. In dry seasons, on the other hand, top-dressings of artificial manures are often inefficient, and the drier the climate the less likely are they to answer. But there are doubtless circumstances when top-dressing may be profitable in any season—as on poor soils, and where the manure is applied for the first time on newly reclaimed land. A top-dressing of farm-yard manure always produces a good effect. In a wet season it is washed into the soil. In a dry one it is often very efficacious as a mulch on grass and arable land, too, if, as is sometimes done, it be applied to the latter immediately after the crop is put in, and before the plants come up.

Artificial manures may be applied either in a dry or liquid form, broadcast or in the drill.

The Crops of The Farm.

GRAIN CROPS.

WHEAT.—*Triticum vulgare*, or common wheat is the most important and most valuable of our grain crops. I have no doubt it is generally known that botanically there exists no difference whatever between what are called *winter* and *spring* wheats : being of one family and varying only in form and habits of growth, the variation has been brought about by habit ; winter wheat grows best by being sown in the fall of the year, and other varieties best in the spring, because they have been habituated to it—not because they will not grow if reversed. Winter wheat sown in spring will grow the first season, but not mature until the succeeding one, and spring wheat sown in the fall will either die off or come stronger and earlier in the spring. Yet a continuity of these changes will ultimately make the winter kind a spring, and the spring a winter one—some doing better than others in both cases, and so it has resulted that we have at present established varieties of both winter and spring wheats. The fact of some having a beard, or a continuation of the awn, is but a variety of form of individual plants indicative of character, and generally, not always, distinguishes those of the least value as regards fineness and large flour producers. In this, therefore, we have more bearded *spring* than bearded winter sorts. It is not common for wild vegetable nature to give much value in large bulk and without much refuse, so we find neglected wheat, or wheat requiring improvements, becoming open and rough in the head, the florets standing wide apart on the stalk, the chaff thick and rough and increasing in extent of beard. On the other hand, improving and well cultivated wheat becomes more compact in the head, the florets standing close together, the chaff reduced in thickness and length and almost altogether without a beard.

Large value in small space should then be our first idea of a typical wheat plant of any variety ; to secure this the head, or ear, should be compact, having the most possible number of berries in the length and breadth, and covered or protected by the minimum quantity in thickness

and length of chaff, or awn. Berries can be too close on the head in certain climates, and may be too heavily overlaid with covering so as to hinder ripening and confine their individual bulk. The form of head best calculated to carry the largest number of berries with sufficient air room for proper maturing is that which, in whatever way it is presented to the eye, will appear of almost equal breadth, whether by the side or the face, the face being somewhat broader than the side ; the florets should alternate and overlap each other to about one-third of their height, should stand out from the stalk at an angle of 45 degrees, and never have less than two berries in each bunch or floret, some having as many as three and four. A thick-set head has five sets of florets to the inch, a thin one two.

In judging the grain of wheat, the points are so important that it will be best to number and describe separately :—

1.—The first thing that strikes the eye is *Colour*. Formerly Wheat was classified by *White* and *Red*, but now when we speak of colour as a point of merit in any variety it means that sort of transparency or brightness which reflects light, as opposed to dulness or having a bleached appearance. This should be uniform and not parti-coloured.

2.—*Size*, or evenness of sample, refers to uniformity of berries to each other, not some large and others small, but nearly all alike—whether large, medium, or small-sized.

3.—*Structure* characterizes the gritty, hard, or flinty kinds from those that are soft and mealy.

4.—The *Skin* may be thick or thin, rough or fine, and should always be smooth, unless when curly from its natural fineness.

5.—The *Form*, or outline, of the berries should be alike, whether long, short or round.

6.—The *Bosom* may be full and close, that is, with a well sprung rib, or an open and flat one.

7.—*Plumpness* has no reference necessarily to one uniform outline like a bag of flour, but that the berry is well filled-out, of whatever form, showing no slackness of skin from want of food—not shrivelled.

8.—*Smell* should not be musty or sour.

9.—The *Taste* should be nutty, sweet and mellow, not sour or bitter.

10.—The *Germinating* points should be distinct ; the base, or root end prominent, and the blade end slighly hairy.

Miscellaneous qualities :—

11.—Hardy, productive, and a good miller.

12.—Weighing, after cleaning, not under 60 lbs. per bushel.

13.—Comparative freedom from disease—whether animal or vegetable.

14.—To tiller, or stool, well—that is, to produce five or more perfect plants from one seed, under good management.

15.—To have sufficient strength of straw to carry the head.

16.—The straw to be of good quality as regards freedom from pith.

Barley (*Hordeum distichum*)

Is a grain of extensive cultivation and great value. Like wheat and rye, it is both a winter and spring grain, though in this country it is almost universally sown in the spring. There are six varieties, differing in no essential points and all originating from the same source. Loudon says, in choosing for seed, "the best is that which is free from blackness at the tail, and is of a pale lively yellow, intermixed with a bright whitish cast; and if the rind be a little shrivelled so much the better, as it indicates a thin skin. The husk of thick-rinded barley is too stiff to shrink, and will lie smooth and hollow even when the flour is shrunk within."

The principal varieties are the two and six rowed; the former being preferred for hardiness and productiveness in Europe, and the last generally cultivated in this country for the superior fulness, and freedom from smut. There are numerous sub-varieties. New varieties may be produced by crossing as with wheat.

Oats (*Avena sativa*).

This important grain is peculiarly adapted for temperate climates; and being a hardy plant, it is better suited for poor soils and cold climates than either wheat or barley, and is consequently more easily cultivated. Friable soils are well adapted for oats; but they are also grown on stiff clays, as well as on both peaty and gravelly soils, and, in fact upon all descriptions of ground. Oats are a gross feeding plant, and in this characteristic they exceed wheat and barley, requiring a larger amount of moisture than either. But a wet and cold summer, unless with the earlier varieties, leads to an untimely reaping time and a deficient harvest as evidenced prominently in Ontario during 1883. Oats thrive best where a large quantity of vegetable matter is present in a state of decomposition, and they are very generally taken as a first crop on newly reclaimed land; on such soils, indeed, the best crops are grown both in respect to quantity and quality. Oats do not degenerate so rapidly as other grains, but for light lands a change of seed is advantageous every three or four years.

They are classified by White and Black, and both colours have *branched* and *side* varieties.

Rye (*Secale sereale*).

There is but one variety of this hardy cereal, though cultivation has given two—Spring and Winter—the former being comparatively unimportant.

Corn.—Indian Corn (*Zea maize*).

This, next to Wheat, is by far the most important crop of the American Continent. There is no one of the cereal grains or grasses which manifests itself under such multiplied forms as maize. The kernels are round, long, or flat, and are white, yellow, blue, red, or streaked.

Nearly all the beef and pork of the vast and fertile West and much in the North and South fed upon it.

Pease (*Pisum sativum*); Beans (*Phascolus vulgaris*); Tare, or Vetch (*Vicia sativa*): are all embraced in the botanical order *Leguminosæ*.

Pease.—There is a multitude of varieties of the pea. The different kinds are distinguished by varying lengths of haulm, shape of pod, and seed, earliness or lateness, and by their edible qualities. The varieties are also known by their colours—grey, brown, speckled, green, and white.

Beans.—There are three varieties of field, or bush bean, usually cultivated in the United States and Canada. The *small white* is most commonly grown. It is the most prolific, bearing the closest culture, and the best for shipping purposes, being very hard, solid, and keeps longest on sea voyages. The *kidney*, or long white, is much larger and of better edible quality, requiring a longer time to mature, with a ranker growth; and the *marrow*, with a large round kernel, and of equally good edible quality as the kidney, requiring the same time to mature. These two last are usually worth full 25 per cent. more in the market than the small white, on account of their superior excellence for table use

The Potato (*Solanum tuberosum*).

A native of South America, and introduced into England some three hundred years ago. The variety is endless, differing in form from round to oblong, flat and curved, or kidney-shaped, their exterior is rough or polished, and of almost every hue—white, yellow, red, and almost black, and the surface is smooth and even, with the eye scarcely discernible, or deeply indented with innumerable sunken eyes. The interior is equally diversified in colour, and is mealy, glutinous or watery, and sometimes

pleasant and sometimes disagreeable to the taste. They likewise differ in ripening earlier or later, and in being adapted in some of their varieties to almost every peculiarity of soil. New kinds are produced at pleasure, by planting the seed found in the balls. The tubers obtained in this way will be small the first season, but with careful culture will be large enough the second year to determine their quality, when the best may be selected for propagation. The earliest are easily designated by the premature decay of the tops. The varieties may also be increased from the seed by hybridizing, or impregnating the pistils of one flower with the pollen taken from the flower of another, and in this way some of the best and most valuable kinds have been procured. Such as have no flowers are more productive of tubers, as there is no expenditure of vitality in forming the seed. They may be compelled to flower by removing the small tubers from the stalks as they form.

In selecting roots several points merit attention, and early maturity, quality, productiveness, and freedom from disease, deserve first consideration. Rough-skinned potatoes for the farm, with white flesh, equal well-shaped tubers, with shallow eyes, and of a dry, mealy quality. Abstractly they may be classified as Early and Late varieties.

Turnips (*Brassica rapa*), Swedish (*Ruta bāga*).

Cultivated by the Romans and placed by them as next to the vine and corn in importance; in Britain in the middle of the 16th century and still the mainstay of high farming there, and though by reason of climate not so pre-eminent in the United States, are becoming equally valuable in Canadian agriculture. There are many varieties of this valuable bulb which differ considerably in average size, form, colour, taste, and keeping properties. Turnips should be judged, not only by produce per acre, but their feeding value as ascertained by analysis, or what is better by actual experiment. The form varies with the kind, and choice can be made for heavy or light soils according to habit of growth—whether a shallow or deep rooter. The fine neck, as indicating quality, is one of the best guides, and *compactness* of shape is preferable for general cases. We are all desirous of having bulk, but as regards character of flesh how few pay attention to the following:

1. Evenness of grain throughout.
2. No stringiness, or maiden's hair.
3. Radiation, or streakiness of cellular tissue is objectionable.
4. Regular marbling is good.

5. Much mottling with dark spots is not good.

6. Spirals, or twisted grain or tissue is not desirable.

7. A waxiness is an indication of solidity.

8. The general colour should be of an orange tinge, and distinct orange spots, averaging $\frac{1}{8}$ of an inch in diameter, are frequently in the best bulbs.

9. Flavour varies much, but it is observable that a sweetness accompanies the most solid.

Mangel-Wurzel (*Beta vulgaris*).

The mangel-wurzel is the cultivated form of a wild sea-shore beet indigenous to many of the countries of the temperate zone. It was known as a garden plant long before its field cultivation was extensively practised. The roots are rich in saccharine matter, particularly those of the white variety, the cultivation of which, and the extraction of its sugar, is an important industry in many of the provinces of France and Germany.

There are several well-known varieties in cultivation. On deep strong loams the Long Reds succeed well, and produce a great weight per acre; but if overtaken by early frosts they suffer severely, as they stand high above the ground. The Red Globe is less productive, and better adapted for light soils; the Orange and Yellow Globe are probably the most suitable for every variety of soils. They are hardy and heavy croppers, and for quality they cannot be surpassed.

Carrots (*Paucus carota*).

There are several varieties in cultivation, amongst which the Altringham and the White Belgian are the most productive, and the most suitable to field cultivation. The former is long and tapering, and grows well out of the ground; the latter is superior in productiveness, its habit of growth is larger and less tapering, being of more uniform thickness.

Hops (*Humulus lupulus*).

There are several varieties—some indigenous to this country, uncertain in early history, not mentioned in the Scriptures, and not clearly placed as a crop until the 10th century. Though a coarse growing, thriving plant, its cultivation requires as much attention as the higher orders. The peculiarity of the *male* and *female flowers* existing on separate plants adds to their more careful cultivation, as it is only the female flowers that constitute a crop, the others being of no value generally after the spread of the pollen.

BERKSHIRES.

Sorghum Sugar Cane (*Sorghum saccharinum*).

Within a few yeare past, this *syrup* producing plant has become of great importance in the States lying north of the cane sugar zone, and may possibly be rendered still more so in the labour revolutions which have lately taken place in the cane sugar regions.

It is an ancient plant, long cultivated in Asia and Africa, for its saccharine qualities, and next to the tropical cane, perhaps more productive than any other. Its success in making sugar has not yet been properly demonstrated in America, owing, possibly, to imperfections in the mode of crystalization. But if it will simply produce molasses, its value can be scarcely too greatly magnified, in the economies of our soil productions.

There are several varieties, as African Imphee, and others, but the Chinese, now most generally cultivated, appears to be most highly approved, for productiveness and mild and pleasant flavour.

Flax (*Linum usitatissimum*).

This usually is classed as a special crop, not being so important to human welfare as many others, yet of much value, in conjunction with cotton, in the production of valuable fabrics. One of the oldest cultivated crops in the world's history—at least 2000 years before Christ. It is native to Europe, North Africa, and America, with some varieties in other parts of the world. The plant is remarkable for the toughness of its fibre, the elegance of its shape, the beauty of the flowers, which are blue, red, or white.

THE GRASSES OF THE FARM.

Although much has been said and written on the subject of grass culture there still remains a great work to be accomplished in this important industry.

Perennial grasses constituting rich, permanent meadows and pastures are generally acknowledged to be the true basis of the agricultural prosperity of a country, consequently the want of these must be a serious inconvenience and drawback to agricultural communities. What must then be thought of the practice, followed in many sections of the country, of making a speciality of growing Timothy, which is a short-lived grass and almost totally unfit for permanent pasture, to the exclusion of other grasses, many of them equalling it for hay crops, but all surpassing it in permanency of meadow and pasturage.

"Grass," says an eminent professor, "commonly forms one single idea, and a farmer, when he is looking over his fields, does not dream that there are upwards of three hundred species of grasses, of which thirty or forty may be at present under his eye." In this age of progress it is no longer excusable that the humblest farmer should be ignorant of the above facts. Comparatively speaking, some grasses are of no value to him, whilst others constitute the foundation of his riches, as they are the staff of life to the most valuable of the domestic animals.

Meadow Cat's Tail or Timothy (*Phleum pratense*).

Herd's Grass, as it was then called in the Eastern States, was first introduced and brought into cultivation in the State of Maryland, by Timothy Hanson, a native of one of the New England States, who built the first grist mill on Jones' Falls, now forming a part of the City of Baltimore, about the year 1720. When it first came into notice it was called Timothy Hanson's Grass, and sold in "Baltimore Town," by that name. The character and name of this grass was soon established by the fine crops of it grown on the Hanson Farm, and the name it received then, will, in all probability, forever adhere to it. It is supposed to have been introduced into England from Virginia, about the year 1760, and for years afterwards its cultivation was confined to moist and newly reclaimed peaty or moorish soils.

The roots of Timothy grass are fine and near the surface, often in the second year forming a perfect mat. Its net-work of roots takes only the strength of the surface soil; but they do that thoroughly, while all beneath is left hard and not permeable to air and light. In such conditions soils gain nothing if they do not absolutely tend to sterility. In two or three years the surface is exhausted, and unless annually overflowed or artificially manured, the Timothy begins to die out. If it is then ploughed and seeded with Timothy again, this exhausted soil is turned to the bottom of the furrow, and the inert soil brought up to have the process repeated. A few years of such treatment will take the virtue out of any land, provided Timothy is grown alone.

The experience of farmers in different parts of the country, in the cultivation of Timothy, is as diverse as the soils on which it is grown. While many of the theories advanced by them may be correct to the extent of their own observations, there are circumstances of soil and climatic influences which tend to produce results not always accounted for in their calculations.

The soils best adapted for the growth of Timothy are moist, peaty or loamy, although there are fair crops grown on light gravelly soils, by heavy manuring, yet there are other grasses far more suitable for such lands. As it is generally conceded that Timothy is only profitable to grow as a marketable hay crop, to make it as remunerative as possible, is the object of the farmer, which can only be accomplished by the selection of suitable soils, liberal manuring, thorough pulverization and cleansing of the land.

Rough Cock's-foot, or Orchard Grass (*Dactylis glomerata*).

This valuable grass is indigenous to the soil of America, and from its adaptability to various soils, its early and late growth, luxuriant foliage and nutritive qualities, is well entitled to an equality with any grass, either native or foreign, which is being cultivated in this country.

It appears that this grass was introduced into England previous to 1760. It forms one of the most common grasses in English pastures, and enters either more or less into all mixtures for meadow or pasture, but is used very sparingly in mixtures for lawns. It has been found highly useful as an early sheep feed, and it grows well in winter. It grows in midsummer in a drought when everything else is parched or burnt up. All beasts are fond of it, both as pasture and hay; it is permanent, grows in the shade luxuriantly, hence it is called Orchard grass. Any soil is suitable if not wet.

Orchard grass, when sown with clover, grows as rapidly as clover, starts in the spring as early, and by this similarity of habit makes a suitable grass to mix with it. For pasturage we greatly value Orchard grass, for three reasons: It stands a drought better than any other, will bear heavier stocking, and comes forward in the spring very early. Orchard grass, also, by its great amount of fibrous roots, tends to improve instead of impoverish the soil, and we have observed that an Orchard grass sod generally turns up a good dark colour on being ploughed. It is not at all fit for a lawn, as it sometimes grows in bunches or tussecks, especially when sown thin. Perhaps there are no other two grasses that can be sown together with so great advantage as red clover and Orchard grass, by their union the crop is nearly double what it would be if each were sown separately; they grow and flower well together, come to maturity about the same time and the clover is supported from falling by the uncommon strength of the Orchard grass.

Meadow Fescue (*Festuca pratensis*).

It comes near in its appearance to rye grass, but seems greatly superior, at least for the purpose of forming or improving meadows, as being larger and more productive in foliage. It is hardy, strictly perennial, and thrives well, not only in wet, but in dry grounds, growing in all situations. It abounds in the best meadows, in the best hay districts, and in short, seems well calculated to supply the defects of rye grass. It has also the quality of producing more seeds than most of the other sorts of grasses which grow rapidly and are easily gathered. No plant, whatever, deserves more the attention of the farmer than this, it being of certain growth, easy culture, productive and remarkably sweet. It will thrive in either dry or wet soils, an advantage which most others do not possess; and, except in point of early growth, it appears to be little inferior to Fox Tail. This grass, which is seldom absent from rich meadows and pastures, is observed to be highly grateful to oxen, sheep and horses, particularly the former. It appears to grow most luxuriantly with the hard fescue. This is said to be the Randall grass of Virginia.

Tall Oat Grass (*Arrhenotherum avenaceum*).

Tall Oat Grass, or Peruvian Grass of Virginia, though a rather coarse plant, yet vegetates with great luxuriance; it is early and productive, and affords a plentiful aftermath. It approaches the meadow foxtail in excellence, for which it may prove a substitute in many cases. It is sometimes found abundant in meadows in England. On the continent of Europe it is cultivated with advantage, and proved at the Experimental Farm to be suitable for Ontario. It is found most beneficial when retained in a close state of feeding. It makes good hay, is natural to sandy loams but thrives best on strong, tenacious clays in England. Tall Oat Grass was introduced into the United States about the beginning of the present century. Judge Buel, of Albany, speaking of it in 1823, says: "It possesses the advantage of early, quick and late growth, for which the cock's foot is esteemed, tillers well and is admirably calculated for a pasture grass. It has the advantage of Orchard grass, which it resembles in the time of maturing, in quickness of growth and its earliness and lateness. Orchard grass always takes two years to make a full crop, while Oat grass sown in the fall on good land will make a crop of hay the next summer. It has also the advantage over Orchard grass in seeding. It may be sown either in the spring or fall, while Orchard grass in this climate must always be sown in the spring.

Notwithstanding these advantages over the Orchard grass, it is not as valuable a grass, it never forms as thick and compact a sod as Orchard grass. It is more liable to injury from drought. It must never be left one day after it blooms, if you want first-class hay, and a rain will injure the looks of Oat grass three times as much as it will injure Orchard grass or Timothy. If, however, it is cut and handled right, it makes beautiful hay. If cut early and the summer is not an excessively dry one it will head twice in the same summer. I consider the Oat grass a more valuable grass than Timothy, for pasture, and it is not nearly as exhaustive to the soil, and if properly handled will make as good hay and twice as much of it.

Smooth Stalked Poa or Meadow Grass. June Grass, Kentucky Blue Grass, Common Spear Grass (*Poa pratensis.*)

This grass has always been a favourite one in England as a mixture with other grasses for permanent pastures, meadows and lawns, but as a separate crop it is rarely if ever cultivated.

The Smooth Stalked Poa is a sweet grass, and readily eaten by cattle in general, it carries its verdure into the winter better than most others, and in the following spring throws out numerous young shoots, so as to make excellent spring food. It produces a good crop of leaves at the bottom, which makes exceedingly fine hay and is fit for cutting early in the spring.

One writer says : "This is one of the most useful grasses, for it vegetates in the driest soils, supports its verdure during the winter, and in the spring throws out numerous shoots for early pasture, the hay is also of fine quality."

Although Poa pratensis is known all over Northern Europe as far as St. Petersburgh, 60 degrees north latitude, yet in no part of Europe has the merits of the Poa family been so fully developed as in the States of Virginia, Maryland and the far famed Kentucky Blue grass region. This region also extends over several counties in Ohio, but the grass does not seem to flourish so luxuriantly on the Ohio side, although in other counties of Ohio, it is said to grow as luxuriantly, and form as staple a pasture grass as it does in any part of Kentucky. The cultivation of this grass must have improved wonderfully within the last fifty years.

W. S. Rand, of Lewis Co., Kentucky, who has had a large experience in the cultivation of Poa Pratensis, says of it : "Common Spear grass and Kentucky Blue grass is one and the same, varying in size and appearance

according to the soil and latitude in which it grows. The plant is a light green colour, the spikelets frequently variegated with bluish purple. Flowers in June, but once a year, which recommends this for lawns. The produce ordinarily is small compared with other grasses, but the herbage is fine. It grows in a variety of soils, from the dryest knolls to a wet meadow. It does not stand severe droughts as well as the Orchard grass. It endures the frosts of winter better than all other grasses, and continues luxuriant through mild winters. It requires from two to three years to become well set, does not arrive at perfection as a pasture grass till the sward is older than three years, hence it is not suited to alternate husbandry, or where the land is to remain in grass only a few years and then to be ploughed up. The best Blue grass is found in shaded pastures. It is the first plant that puts forth its leaves and remains green if the season is favourable. Early in the fall it takes a second growth and flourishes vigorously until the ground freezes. Blue grass makes the sweetest and best of hay. It should be cut as the seeds begin to ripen, spread well and protect from rain and dews, on the second day stock and shelter and salt. Blue grass is not commended to cultivate especially for hay. It is not as profitable a product to merchandize as Timothy and Orchard grass. Blue grass on limestone land is perpetual, if properly managed, and the perfection it attains in Kentucky is to be attributed to favourable soils, a temperate climate and mild winters, all of which have contributed to make Kentucky Blue grass the basis of our agricultural wealth and prosperity."

Fowl Meadow—False Red Top (*Poa serotina.*)

This grass has been known and cultivated in the New England States from an early period. It grows tall and thick, making a more soft and pliable hay and better adapted for pressing and shipping off for the use of horses on board, than Timothy. It yields well to the acre, and will not spoil, although it stands beyond the common time of mowing. It must be sown in low moist land. The cultivation of this grass seems to be principally confined to the New England States, where it is considered a valuable one. Its merits consist in its thick and abundant growth on land more moist than is well adapted to common upland grasses. It never grows so coarse or hard but that the stalk is sweet and tender, and eaten without waste.

It should enter largely into a mixture with other grasses sown on good, moist soils.

Yellow Oat Grass (*Avena flavescens*).

Yellow Oat Grass, grows naturally in dry pasture, on rather light and good soils yields a considerable bulk of fine herbage, and deserves to form a portion of all mixtures on light, dry soils, either for hay or pasture. It arrives early at maturity, and although a perennial, yet if allowed to ripen seed, it is but of short duration, particularly if grown on stiff, moist soils. It is the most useful, as a hay and pasture grass, of the genus Avena, as well as the smallest seeded of all the native species.

Mr. Tauton says of it: "That it is so rich in its qualities, and so universal a citizen of the world, that there is no soil from the lightest calcareous loam, to the stiffest clay into which he would not introduce it where he intended to form a permanent turf." It is said that a top dressing of lime will double the produce of this grass, and that it thrives best on calcarious soils.

Fine Bent Grass, or Red Top. (*Agrostis vulgaris*).

This grass has always been considered as a troublesome weed in dry, light soils, and not being well liked by cattle, it commonly attracts attention as a useless grass to be got quit of as soon as possible, more particularly as its creeping roots prove highly injurious to the soil. However, notwithstanding its bad qualities, sheep are found to eat it, and it is sometimes sown on bare, gravelly places, where the more valuable grasses will not grow for the purpose of covering them with vegetation. Red Top has been long and favourably known in this country as a permanent pasture grass. It is supposed by some to have been introduced into the Northern States. But I am inclined to the belief that it is as much indigenous to the soil of America as it is to that of any part of Great Britain. It is found growing naturally on fertile and medium soils, and there are few meadows of three or four years' standing in which Red Top is not found in abundance, and is sure to assert its supremacy and become permanent, while in the course of six or seven years the Timothy has disappeared.

Red Top as a mixture with other grasses is necessary, but only in small quantities, on land capable of producing better grasses. On soil, where the more valuable grasses will not succeed as already stated, it is highly useful for the purpose of covering them with vegetation. On pasture lands where Red Top predominates, the fields must be overstocked, for if allowed to grow up to seed, the cattle refuse it, which is sufficient evidence that it is not so much relished by stock as some of the other pasture grasses. Red Top and the now very popular Rhode Island Bent, are one

and the same grass, any difference in their appearance being produced by varieties of soils. Although it is claimed that the Agrostis, or Bent grasses thrive best in moist soils, yet it has been sufficiently proved that Agrostis vulgaris (the true Red Top) may be sown to advantage on a variety of soils.

It answers well to sow Red Top separately on moist lands where old grass has run out, or become mossy. On such places it would fill the soil with its numerous roots and make it more passable. Also on moist, undrained soils, liable to occasional overflow, if cut early, it has a thick bottom, and makes a heavy crop of second-hand hay.

Perennial Rye Grass. (*Lolium perrenne*).

Perennial Rye Grass contains upwards of sixty varieties, some of which are annual.

It is found to flourish on most kinds of soil, and grows under circumstances of different management on many upland situations, though sound and somewhat moist midlands are the most appropriate. It soon arrives at perfection and produces in its first year of growth a good supply of early herbage which is much liked by cattle. It produces an abundance of seed which is easily collected. Perhaps there is no other grass so widely known, and in years past, so extensively cultivated as Rye grass has been, throughout Britain. At present it is supplanted to a great extent by the cultivation of Timothy, which seems as in this country to have become an universal favourite. Like Timothy, the Rye grass is an impoverisher of the soil, and requires annual top dressing, else in a few years the land becomes exhausted and the grass dies out. The analysis of this grass will favourably compare with the best of cultivated grasses, and should be a strong recommendation in favour of its cultivation on a more extended scale than has yet been given it in America. It is superior to Timothy, as a mixture for permanent meadow or pasturage.

Italian Rye Grass. (*Lolium italicum.*)

The marked distinction between Italian Rye Grass and the perennial rye grass and its varieties is that Italian Rye Grass has an awn or beard adhering to the seed while the varieties of the perennial are beardless.

Compared with any of the varieties of common rye grass, the Italian Rye Grass affords a stronger braird, arrives at maturity sooner, has a greater abundance of foliage, which is broader and of a lighter or more lively green colour, grows considerably taller, is more upright or less inclined to

spread on the ground, its spikes, as already stated, are longer, spikelets more thinly set, and upon the whole producing a less bulk of seed which is smaller. In France this grass is stated to be generally sown in autumn at the rate of 16 to 18 pounds per acre, and the seed rolled in; that in the next autumn the turf is covered like an old meadow, and the crop of the following year is more than double; its growth, also is so rapid, that if sown with clover or lucerne, it will quickly choke them. It is also said to be of such a hardy nature that when cut in November, it has put forth fresh shoots of a foot in length in the close of December, and it has been found to stand the winter in the North of Europe. In quickness of growth this grass has excelled all others of the true grasses which I have sown this spring and, bids fair to be a good crop notwithstanding the severe droughts it has been subjected to. Italian Rye grass is preferable to any of the other varieties for soiling purposes, it gives an early, quick and successive growth till late in the fall, it will stand any amount of forcing by irrigation, liquid manure or phosphatic applications It has been grown successfully at Guelph, Ontario, but for permanency has to be associated with the more hardy grasses in order to withstand the winters.

HUNGARIAN GRASS, BRISTLY FOX TAIL GRASS (*Setaria germanicum*).

This grows in a dry warm soil. The stalk is nearly solid and the hay very heavy, and if cut in time will be as green as grass, and a horse will want little grain for ordinary farm work. One advantage in raising Hungarian grass is the lateness it may be sown, for a farmer finding in June that his meadows are light, or his corn a failure, can sow Hungarian grass and make up the deficiency.

Many make a mistake in seeding too soon; the crop will be more or less injured by weeds, which seem to grow under all circumstances. It needs but seventy days of reasonably good weather to make a crop of hay from this grass.

THE CLOVERS OF THE FARM.

The clovers or artificial grasses, belonging mostly to the Leguminosa or Pulse Family of plants are cultivated and used both in a green and dried state as food for the domestic animals.

The artificial grasses have been cultivated over two centuries in England. Red clover is supposed to have been grown as a field crop since 1633. In this country; the introduction and cultivation of Red clover dates from 1770, about that time a small quantity of red clover seed

reached Philadelphia, and was sown in gardens, and on pasture lots in the neighbourhood of the city.

Of the many substitutes for clover, which are grown in England, such as lucern, sainfoin, &c., few of them are as yet extensively cultivated with any degree of success in this country—although lucern seems to be far better adapted to the climate of this country than that of Britain. Sainfoin has been cultivated in England since 1651, and is still in high repute. Alsyke clover is not receiving the attention to which its superior merits entitle it. The yellow clover or trefoils grow naturally on a variety of soils throughout the country, on all of which they seem to flourish, but are not cultivated to any extent deserving of notice.

To those who follow a system of soiling their cattle during the spring and summer months a variety of artificial grasses will be found of great benefit, as to which see special chapter on "soiling."

Common Red Clover (*Trifolium pratense*).

Red clover abounds in every part of Europe, and even in Siberia. Although it flourishes in dry, barren and shady places, yet it delights most in such as are rich, moist and sunny. This plant affords a large produce of leaf and blossom, by which the land is preserved in a more perfect state of closeness and shade, while the crop continues upon it, than by any other artificial grasses. It has consequently a greater influence in ameliorating the soils and preparing them for wheat crops to greater advantage.

The soils best adapted to the growth of clover, as regards its nutritive properties are decidedly calcarious ones, and the same may be said of other grasses as well. No part of Europe, for instance, produces natural grass of a finer quality than Ireland, and much of it has been immemorially in pasture, but the surface soil lies almost throughout the island upon a limestone bottom.

White Clover—Dutch Clover (*Trifolium repens*).

Trifolium Repens or White Clover is also known under the name of Dutch Clover, from the English having first learned its use from the Flemings, and from large quantities of the seed being imported from Holland. Its favourite soil is limestone, but it is one of the most general grasses, being found in almost every situation, from the lowest to the highest meadow; though on very poor land it is often so small, and grows in such a creeping manner among the lower leaves of other herbage, that

it is scarcely perceptible until brought up by top-dressings, which probably has given rise to the very general opinion that it is indigenous to some soils. The central root penetrates to a considerable depth, and the plant is thereby enabled to resist the effects of drought, particularly on sandy soils.

The branches which trail on the surface send fibrous roots from their joints down to the ground, and hence this species of clover maintains itself in land of opposite qualities, for if the surface be too dry to afford nourishment to the foliage, it is preserved by the roots. It is not, however, so nutritive as the common annual red clover, nor does it form a good pasture when sown by itself, for it has been found injurious to sheep; but, combined with other grasses, it is a valuable plant. It has been said there is no better test of good land than its running spontaneously to white clover. Its analysis is a good one.

Alsyke or Perennial Hybrid Clover (*Trifolium hybridum*).

Alsyke or Perennial Hybrid Clover, which takes its name from the Alsyke district, near Stockholm, was first introduced into Sweden.

Within the last century vast improvements in agriculture have enabled this valuable clover to be brought to great perfection, and it is now held in high estimation by the Swedish farmers, and extensively cultivated by the leading agriculturists in Great Britain and America.

Yellow Clover, Hop Trefoil, or Shamrock Clover (*Trifolium procumbens*).

The Shamrock clover grows naturally on dry, gravelly places, and has been recommended for growing on such soils as are incapable of supporting the more valuable grasses and clovers; but, from the small bulk of produce which it yields, the propriety of its cultivation is questionable, and, besides, cattle are not found to relish it if they can procure more nutritious food.

It is also very liable to be injured by mildew. Trifolium Procumbens is readily distinguished from Trifolium Filiforme, by its more compact, upright, and branching habit of growth, and by its close, globular, shining heads of yellow flowers.

Lucerne (*Medicago sativa*).

Lucerne was introduced into British husbandry about the middle of the 17th century, and has ever since been cultivated successfully in the British

Isles. It still continues a favourite plant for soiling purposes. Although the virtues of Lucerne have been most largely descanted on by British writers, it is a plant which is far better adapted to our own climate than that of Britain, as abundantly evidenced at the Ontario Experimental Farm. The latter country it would appear, does not possess the requisite degree of heat and dryness to insure the full advantage of its real value as with us. It pushes forth with vigour in the spring, and increases in luxuriance from year to year. It is generally fit for cutting a fortnight earlier than red clover. It starts with remarkable vigour immediately after being cut, and in the course of a week the field is again covered with verdure. Lucerne requires a deep soil, although if sown on a dry, light soil, it will extend its roots downwards to a great depth, and will show increased luxurianee of growth year after year.

This clover is so important that we give its analysis :

100 parts as taken green from the field.	
Water	69.65
Albuminous or flesh forming principles	3.83
Fatty matters	.82
Heat producing principles, starch, sugar, gum, etc	13.62
Woody fibre	8.74
Mineral matters or Ash	3.04
	100.00
100 parts of the grass dried at 212° Fahr.	
Albuminous or flesh forming principles	12.96
Fatty matters	2.75
Heat producing principles, starch, sugar, gum, etc.	40.16
Woody fibre	34.21
Mineral matter or Ash	10.11
	100.00

Sainfoin or Cockhead (*Onobrychis sativa*).

France is considered the country most favourable to the growth of Sainfoin. In Europe it is commonly called French grass (Sainfoin, Holy Hay). In Switzerland and other mountainous countries, Sainfoin is a main dependence, because in many parts of those countries the finer grasses will not grow profitably.

Sainfoin has long been cultivated in England, and is found growing wild in nearly all the chalky districts of the kingdom. Its cultivation is still an important feature in British husbandry. Chalky soils, and sand upon chalk, are its favourite soils; also loams and clays, if not too stiff or

too deep. On limestone it does well, too—on very dry, sound gravels—but not if the under stratum be mixed with clay.

Common Vetch, or Tare (*Vicia sativa*).

From its tall, close, hardy growth, and succulent nature, this plant is capable of being introduced with considerable advantage after the manner of artificial grasses, between different kinds of grain crops, without exhausting the land of its fertility; at the same time it will afford a useful supply of green or other provender for the consumption of different sorts of cattle. Writers on agriculture distinguish two species of the common variety of the other. The former is much less hardy than the latter or tare, namely, the spring and winter tare. Probably one is only a winter tare, the plants of which are capable of resisting the effects of the most inclement seasons.

With respect to soil, this plant is almost without limitation, as it will grow on all the varieties, from the superficial gravel to the deep, stiff clay; yet on gravelly loams, when too much moisture does not prevail, it flourishes most vigorously.

There is no herbage more grateful to the horse, cow, or sheep, in the hot season of July, than the juicy vetch. And for milch cows particularly the flow of milk will be increased, the butter of prime quality, and the advantages derived from the growth of this early forage plant will soon manifest itself.

PERMANENT PASTURES.

The importance of this branch of agriculture may be thus briefly summarized:

(1) it gives several crops per annum.

When varieties of grasses and clovers are established in association, the case is one much similar to what nature, under the best of circumstances, offers to animal life—change every week from May to October. It is then a point to be studied in choosing the kinds, that they do not all, or even many of them, come during one month or leave off altogether at the same time of the year, but come and mature and go off, if possible, in regular succession from spring to autumn. Thus every week, or every month at least, is equal to a change of field, and secures the value so much desired through such conditions.

(2) IT OFFERS AN EARLIER AND LATER BITE THAN OTHER PASTURES.

It is a well-known fact in the growth of pastures where a number of different plants exists, that by such an association there is mutual support, nursing, and shelter, which give early and late growth. The value of this early bite is something incalculable after a long, close winter, and particularly, it meets the heavy "back-going" of which we see so much in ordinary practice among cattle and sheep. So also, the rich "foggage" sends on deep into winter.

(3) ANIMALS ARE MORE HEALTHY AND LESS LIABLE TO DISEASE UPON IT.

All experience goes to show that browsing animals more than others require change of food often, not only in the form of soft succulent growth but harder and woody matters at the same time. Some of the grasses and clovers are also directly medicinal to cattle and sheep, so that altogether, with a choice of ten or twelve throughout the season, health is better and diseases less frequent.

(4) IT CANNOT POSSIBLY BE DESTROYED BY DROUGHT OR FROST.

The immense importance of this needs little comment: it comes strongly home to us in this country. It is obvious that as association of plants and roots gives mutual support and protection with a close surface, there is necessary much less risk of damage when rain is scarce and heat abundant—much less evaporation and less "cracking" of the surface. As crop after crop succeeds each other week by week and month by month, the soil is not exposed to the burning sun, and moisture is retained to nourish at all times. Then again, if winter or summer excesses do kill two or three kinds, there remains enough to make the pasture still of greater value than anything else. All through the very severe drought of several seasons past, the permanent pasture of the Ontario Experimental Farm was never bare, never wanting a fresh bite, but so close and strong that we had to separate with the hand in order to view the surface soil.

(5) IT GIVES MORE DAIRY PRODUCE THAN ANY OTHER FORM OF FODDER.

During the last half century the best managed old pastures of England have stood at more value per acre than the richest arable land, partly because of their permanency of crops, and largely because of their being able to graze *three cows per acre*. There seems no reason why Ontario cannot do *one-third as well* as this, and I am convinced it can be done. For

three years in succession on the Experimental Farm, on a small scale, on comparatively old permanent pasture, and on that of two years' standing, we have clearly proved that *seven sheep* per acre can be well done to. This is equivalent to one and one-quarter cow per acre. There is, then, no other form of fodder that can do the same thing.

(6) IT GIVES THREE TIMES MORE BEEF AND MUTTON PER ACRE THAN OUR ORDINARY ROTATION PASTURES.

The average timothy and clover pastures of the country, in connection with mixed farming, just graze on an average, one cattle beast to every three acres—taking from 1st May to 1st November on an average of years. This is substantially correct. But we have shown in the preceding paragraph, that three and three-quarter cows can be kept on three acres of the permanent kind required, and as the proper stamp of two-year-old steers and heifers preparing for the butcher eat more than an ordinary milk cow, we shall say one beefing animal per acre. There are at the present time about 20,000,000 arable acres in Ontario, possessing practically no permanent pasture, but 3,500,000 acres of rotation pasture that do or should therefore maintain 1,190,000 head of, say, beefing cattle. Were only one-tenth of this rotation pasture under the permanent form of it, the annual gain to the Province would exceed $11,000,000. The magnitude and national value of a few acres, per farm, of first-class permanent pasture is thus apparent.

(7) IT CAN BE USED AS A SOILING CROP ANNUALLY.

When everything is most propitious and grass abundant, and where a number of bulls and calves are housed during summer, and a reliable cut of green foder is most important, this can always be had from well-managed, permanent pasture, early and late, at the rate of ten tons per acre, green weight, where no systematic soiling crops are upheld.

(8) IT IS LESS EXPENSIVE TO PRODUCE AND MAINTAIN THAN ANY OTHER CROP.

While it cannot be maintained that there is no trouble, time, and expense incurred in establishing successfully all that we desire in this connection, nor that its permanency and value can be upheld without top-dressing materials, it is not difficult to see that once fairly afoot, permanent pasture costs a great deal less per acre per annum proportionately to produce received than any other crop can possibly do.

(9) IT IS A CONTINUAL SOURCE OF RELIANCE AND WEALTH.

Most other things may fail during a particular season, times may be bad, and disease decimate the farm, yet the permanent pasture will smile and invite a share of its wealth.

(10) IT IS PERMANENT.

The successful establishment and maintenance of permanent pasture implies:

1. A soil free of dead water.
2. A rich surface, friable but firm,
3. Depth of soil to allow roots beyond reach of drought.
4. A retentive soil to resist drought and hold moisture.
5. Securing *variety* of grasses and clovers and thick seeding.
6. Easy pasturing for first two seasons.
7. Heavy stocking, to keep down rougher plants.
8. Top-dressing, at least every third year.

But more specifically on such an important subject, clay lands tend rather to be selected for the growth of grass, because of the burden of labour cost which in their case attends arable cultivation. And for the same reason—the increasing cost of labour—the whole area of pasture land in England, for example, is gradually and has been of late years even rapidly increasing. But lands of all kinds, chalky, sandy, loamy, clayey; all furnish their contingent to the pasture area of the country. It is a great advantage to all farms of whatever soil to have a certain proportion of permanent pasture.

The value of the annual produce depends on the quality of the soil and the management of the crop. Pastures are indeed quite as amenable to treatment as ploughed fields. Continuous manuring of any one kind rapidly changes the character of the grasses and other plants covering the ground. Continuous mowing or continuous depasturing, continuous treatment of any kind indeed, favouring as it does one set of plants rather than another, ultimately gives them the advantage in the perpetual contest of growth which is maintained among them, and the result is soon visible in the altered character of the vegetation.

It is of course on the presence of the better and more nutritious grasses and clovers and the fitness of the soil and circumstances to luxuriant growth that the value of any pasture depends; and the composition of a

bit of good turf is thus the principal index to the value of the field. The vegetation is made up largely of grasses, somewhat of clovers, and also to some extent of weeds.

Pasture grasses are those smaller perennial species usually associated in meadows which are grown for their herbage: grain or cereal grasses being the larger kinds cultivated for the sake of their seeds. When we examine any mixed pasture we shall conclude that the plants present in it are in various conditions as to vigorous growth and cultivation—various states of prosperity, some developing, while others it may be, are declining. And if we neglect to drain, weed, manure, and roll our meadows, we neglect the proper cultivative agencies which are calculated to maintain their prosperity and excellence, and they will gradually relapse into a more or less wild state.

The best turf, then, is that which is composed of the best sorts of grasses; and these may be in a good or bad condition, according to the state of cultivation. When only good grasses prevail, the crop of hay will be of the best quality and of the greatest yield. But as a rule few meadows are made up wholly of grasses; and all good natural pastures have also a varied collection of other plants, which differ greatly according to the nature of the soil and the state of its cultivation.

Besides those that are invariably present in good grazing grounds, there are in all grass land as in all arable land many weeds. They are more frequent in poor pasture than in rich grass, and much more frequent in lands annually mowed, than in lands which are annually grazed. There is less opportunity in the latter case for their seeding and propagation.

Owing to this variety in the character of its herbage and the varying circumstances out of which it has arisen, the value and capabilities of grass land vary very greatly—between the extreme of the poor hill pasture, adapted only for sheep, and the richest feeding land to be found in some of our river and valleys.

Many considerations affect the question of the most profitable mode of managing pasture land in any given locality. The climate and soil, the position of the land with regard to railways and markets, and the existence of any special demand for live stock or for its produce of any description, the healthiness and suitability of the land for breeding, feeding, or dairying cattle, or for breeding or fattening sheep, the supply of labour, all need to be taken into account.

Strong rich pastures producing, succulent grasses abundantly, are well adapted for fattening large cattle either without any extra food, or with the aid of a little cake. Second-rate pastures, especially if on a cold

subsoil, will generally yield a better profit from the dairy, and from the rearing of young cattle. Dry hilly pastures are most suited to sheep. The grazing of land by a mixed stock of cattle, sheep, and horses results in the land being more evenly grazed than where one kind only is kept. Where, however, many sheep are grazed with cattle, as they pick out all the finest of the grasses and clovers with their narrow noses, the cattle will not thrive so well. But sheep, on the other hand, eat with avidity and impunity many weeds which cattle dislike and avoid. Many pastures grazed only with cattle are in spring time perfectly in bloom with weeds, which a few sheep mixed with the cattle would keep down. Horses when kept in a pasture to themselves are very unlevel grazers, but a few kept in a large cattle pasture will graze the rank places where cattle have left their manure and about gateplaces where the land has been trampled.

It is better not to graze pastures very closely in any season of the year. Pastures when bare are much more likely to suffer from either drought or cold than when covered with grass two or three inches deep, and they grow much more slowly. All plants feed from the leaf as well as the root, and when cropped too closely the power of drawing nourishment and attracting moisture from the air is much lessened. Young turf requires specially careful grazing; but it must be remembered that if allowed to get ahead in the early summer, it becomes overgrown and benty, and is rejected by cattle and sheep. And the aftergrowth of grass is hindered throughout the year by the old dry grass remaining on the land.

Great improvements have been made in many pastures by drainage and top-dressing with bones, lime, guano, or other manures—a subject which will be treated of under the head of draining and manures.

Coarse weeds growing on pastures may be checked by mowing. The common thistle may be thoroughly checked by persistent spudding or drawing; but in those pastures where it is very abundant this would be an endless task, and mowing is resorted to before the thistle is fully in flower. Nettles which are a sign of high condition, and often indicate the former site of a garden, may also be destroyed by repeated mowing.

Grass land should be well grazed down in the early part of the summer, as if left to grow too long it becomes unpalatable to stock. In a very growing season, when grass gets ahead, and stock cannot be bought with a prospect of paying for their keep, the long grass which remains should be mown off and made into hay whenever the weather is suitable, or if not over plentiful, allowed to lie as "mulch" of which practice good examples occurred at the Ontario Experimental Farm in 1883.

In some districts the custom prevails of mowing and grazing in alternate years. In practice it is found that this has not much to recommend it: and it is often an excuse for mowing land without properly manuring it. Land that has long been mown yearly and well manured, puts up varieties of grasses which grow up and ripen together about mowing time in July better than the grasses of an ordinary pasture will do. Nor will a field generally mown graze as evenly as a regular pasture. Many meadows are specially adapted for the growth of grasses for mowing, either from being capable of irrigation, or from being on a cool subsoil. When a meadow is on a shallow though not on a dry subsoil, it will, although well manured, fail to yield a good crop for hay in a hot, dry spring and summer, the flower stalks pushing up without much bottom grass. And such lands will generally be better grazed.

In districts where there is a large proportion of arable land the meadows are often in poor condition. The whole of the farm dung is used on the plough land, and the meadows may be dressed with lime and soil, or other weak composts. This is, however, not true economy. Where farm dung cannot readily be spared, or where it would have to be hauled a long distance, or over difficult roads, its place may be well supplied by 300 of bone manure.

It is always best to secure an even crop of grass all over the land, the cost of mowing and haymaking not being proportionately greater with a full crop than with half a crop. By dressing all weak spots in a meadow at the end of April, when they may be detected, with a light dressing of nitrate of soda, this result may be obtained. Farm dung is best applied to the land either immediately after the hay is cleared, or in early autumn, after the early growth of aftergrass has been fed off. Ten or fifteen loads per acre, equal to nearly as many tons, is a good dressing. It may also be applied any time in the winter, but with generally an inferior result than is realized from an earlier dressing. The dung, after being spread should be chain harrowed once or twice. If not got on before spring, and a dry season comes, the crop will be injured rather than benefited by it.

Where the mowing meadows lie in such a situation and form that they can be readily irrigated with water either of natural fertilizing quality or mixed with sewage, they may be beneficially flooded in the winter and spring. The drainage from the farm buildings and yards, when collected in cesspools and mixed with sufficient volume of water to flow when flushed off by gravitation over a considerable area of land, will be very beneficial, and will produce heavy crops of somewhat coarse grass. When from the position of the barns, etc., or the scarcity of water, this cannot

be done, the liquid manure should be collected into a tank, the rain water being excluded, and carted out in showery weather to the nearest meadow or other field requiring manure. Much catch water from land drainage and brook and river water is of little benefit except in a very dry season, and any outlay required to secure the use of it must be kept within moderate limits. When the main drain crosses a road, the water can be very simply utilized, of which there is a good example at the Ontario Experimental Farm.

On the meadows cake and corn may be freely given to sheep, and the troughs regularly moved over the fields, the meadows will be put in high condition, a thick-set fine herbage being obtained in great abundance, with a better result in quality and quantity of produce than can be obtained by any other method of manuring. If the meadow be on a warm soil, it is specially desirable to get the land well covered with grass before hot weather comes. Meadows in very high condition on a cool subsoil can be grazed even in April without risk. Meadows and clover set apart for mowing require to be looked over in the spring, all sticks and stones being picked off, and then to be rolled.

Permanent pastures are therefore sometimes treated as yielding annually several cuttings of green fodder, taken to cattle in yard or stall.

If ordinary land be seeded according to the tables of the seedsmen with the several sorts of grasses, each of the proper quality, which are found in good pasture, it will after the first free growth for a year or two generally diminish in productiveness—becoming very disappointing indeed in the 5th or 6th year—after which, if grazed and manured and liberally treated, it will begin to improve, and may, 8 or 9 years thereafter, attain whatever rank as a pasture shall ultimately belong to it. And if instead of sowing an elaborate mixture of seeds, the common practice be followed of sowing 8 or 10lbs. of mixed clover seed, and some 30lbs, of mixed grasses of unknown composition, along with a barley crop, and the subsequent pasture be afterwards liberally treated—mown the first year and thereafter not closely grazed (to which end sheep should not be allowed on it)—the land being periodically liberally dressed, and bone-dust or superphosphate being applied—the end will be that ultimately a fair pasture will be obtained. This will come about partly through the development of the best grasses which were sown, and partly by the gradual encroachment of the better grasses natural to the soil—which have been unable to hold their own, or even to do more than that, under the liberal treatment given.

The usual practice, however, when it is intended to lay a field down to grass, is, after draining and thorough cultivation, and manuring by means

of a root crop, to sow a suitable mixture of grasses and clover with a light seeding of barley. This is done when the land is in good tilth, in April or May. The clovers are sown by themselves, and the mixed grasses at a second operation. The barley produces a crop, which is harvested; and young cattle may keep the grass down the first autumn if there is an abundant growth: and the field may be mown the next year, being well manured in the autumn. It should therefore be grazed annually—first with young stock,—the cattle receiving at the same time some grain, thus enriching their manure, and adding to the fertility of the land. It should also be manured occasionally: bone-dust and superphosphate promoting the growth of the clovers; and nitrate of soda and sulphate of ammonia promoting the growth of the grasses. In the course of a few years the land, if in a suitable climate, will become a good permanent pasture.

But in order to obtain on old tilled land a good turf as easily as possible, it is the best policy to sow the seeds on land suitably prepared without any grain crop. One advantage of this plan is that if annual weeds spring up ahead of the clover, they may be destroyed without injuring the clover by moving when 4 to 6 inches high, and any places in the field where the clover plant appears deficient can be re-sown at once. The risk of some of the small seeds being smothered by the growth of straw is also obviated.

It is most important for the land to be clean, firm, level, and of good tilth before sowing the seeds. If the land be unlevel or rough, many of the small seeds sown will not germinate. If the land be foul it may be better to delay the seeding a year, and take a crop of turnips or other roots, or even a summer fallow. Unless the field be in high condition, 200 or 300 lbs. per acre of prepared bone manure, should be well harrowed into the soil before sowing the seeds. This dressing may be repeated with advantage, or 100 of nitrate of soda be substituted as a top-dressing when the young seeds are 3 or 4 inches high. It will generally be best to obtain a mixture of natural and artificial grasses and clovers specially adapted to the soil of the field, from one of our leading seedsmen, several of whom have already bestowed attention to the subject.

The best time for sowing is from the middle of April to the middle of May, avoiding danger from spring frosts and summer drought. A dry, still day should be chosen, and it is better if there be a probability of an early fall of rain to start the seeds quickly. The land, being clean and level, should be harrowed with light harrows immediately before sowing the seeds, and rolled directly after. A very light harrow may sometimes be used with advantage after the seeds are sown, but unless lightly done some of the small seeds will be put too deep, and will not germinate. A

seed harrow will be the best way of sowing the seeds, going twice over the land, once with the light grass seeds up and down the furrow, and then again the reverse way with the heavier clover seeds. An expert seedsman will, however, on a still day sow the seeds evenly by hand. Where it is desired to sow permanent grass seeds on land already sown with fall wheat, the end of March or in April will be a suitable time, as the wheat plant will in some measure protect the young seeds from damage by frost. A light harrowing before sowing and rolling after will be all the tillage required.

When sown with spring grain, the seeds may be put in either directly after the grain is harrowed in, or in May, when it is well up, the roller being always used to cover them. Two or three lbs. per acre of rape, is in some districts commonly sown without a grain crop, either with mixed clovers in alternate husbandry, or with permanent grass seeds. The rape and seeds are fed off together in the following autumn, and if cake be also given the young seeds are greatly enriched, and in fine weather the treading of the sheep benefits the seeds. Young seeds should not be closely grazed the first year, or be trodden in wet weather by heavy stock. After frosts commence in fall stock should not be allowed to go upon them. Different opinions exist as to the best mode of treating the seeds the following spring. They may either be mown early in June, taking care not to let them get overgrown, and afterwards fed, or they may be grazed throughout. A top-dressng of two or three hundred of bone-dust will in either case be often applied with advantage early in April. If, as often happens when seeds are grazed, rough patches are left ungrazed these should be mown off.

Where the land is naturally poor, or has been exhausted by a long course of tillage, a very liberal treatment will be required to bring it into profitable turf. A dressing of good dung or 300 lbs. of bones, repeated light dressings of quick-acting manures, such as superphosphate, and the feeding of cake on the land, are all efficient means of improving the turf. Close feeding by sheep is deemed prejudicial, as they will pick out the clovers and finer grasses, and leave the coaser grasses to get the mastery. Where however cake is freely given, this objection is in some measure overcome, as the manure greatly enriched, thickens the turf, and sheep when having cake will more rapidly eat coarse food.

Our present knowledge of the adaptability of the better grasses and clovers for permanent pasture in Canada, points to the following which we obtain from many trials at the Ontario Experimental Farm.

Grasses.		*Clovers.*	
Timothy	7 lbs.	Lucerne	4 lbs.
Orchard	4 "	White	3 "
Italian Rye	2 "	Red	1 "
Perennial Rye	2 "	Alsyke	1 "
Tall Oat	2 "	Yellow	1 "
Red-top	2 "		— "
Meadow Fescue	3 "		10 "
Bent	1 "	Grasses	25 "
Kentucky Blue	2 "		—
	— "	Per acre	35 "
	25 "		

NOTE.—The Rye grasses will hold in the most favourable positions in Ontario, in association with others, but rarely alone :

The Cultivation of Farm Crops.

A SOIL well stocked with the necessary ash ingredients of plants, and nitrogen; in a good physical condition; situated in a good climate, and possessing a good subsoil, and a favourable aspect, are the necessary conditions of fertility. Each of these conditions has occupied attention elsewhere in these pages, and our next study must be that of those general principles which should be observed in order to secure the best crop with the least possible injury to, or the greatest possible improvement of, the land.

ROTATIONS.

The idea of an orderly succession of crops is no doubt ancient. A high antiquity is accorded to this system by Mr. R. B. Morier when he speaks of it as one important aspect of the early Teutonic freeman even so far back as the first century. How the idea of a rotation first originated may be readily guessed from the fact that the practice of growing a particular kind of crop year after year on the same land cannot be carried on long

without evil effects. A limit has been reached, even in many of the most fertile soils of the States and Canada, where wheat cannot longer be grown.

The first result of the exhaustion of land in a more or less nomad condition of society would be the migration of the cultivator to fresh fields, and the relinquishing of the worn-out lands to natural pasture. This in itself would be rest, and it is not necessary here to go over the reasons for the gradual recovery of such relinquished lands. Suffice it to say that fertility would in time return to them, and they would once more be capable of remunerative cultivation. This in itself would be a sort of rotation or alternation between a series of years in grain and a series of years in pasture. Convenience would suggest the advantage of sowing one portion of the land with spring grain and another with winter grain; and systematic working of fallows would shorten the period necessary for renovating an exhausted field; and the three-field course would thus gradually shape itself, and all the more readily as the increase of population rendered better cultivation imperative.

Bearing in mind the disintegrating forces that are always at work in a soil, the benefits of a fallow no longer remain a mystery. What might require years to produce, if the soil were left entirely to nature, is accomplished in a single season by pulverizing and aerifying effects of tillage implements, assisted, as they invariably are, by the action of the atmosphere, moisture, and changes of temperature.

The benefits of a fallow were known to the Israelites, who were required to fallow all their land once in seven years. The Romans introduced the practice into England; but a systematic tillage of bare fallows is said to have been unknown in Scotland till about a hundred years since. The old three-field course is still practised in certain stiff land districts. It consists in taking a crop of wheat, followed by beans, oats, or sometimes clover, and the third year it is fallowed. Such a system is not likely to be remunerative at present grain prices, and if a better system of cropping cannot be profitably introduced, such lands ought to be laid away to permanent pasture. In the better classes of clay lands, bare fallows are made occasionally, if a field is exceptionally foul, or when the season is unpropitious for root cultivation. As the quality of the clay land rises, the intervals between the fallows are lengthened.

Principles on which Rotations are Constructed.

A clear view of the principles which should guide an agriculturist in constructing rotations will be best obtained by dividing all soils, in the

first place, into heavy and light, or stiff and free. The treatment of these two classes of soils is about as opposite as it well can be.

Stiff soils are essentially suitable for corn or grain crops. Hence in examples of rotations it will be found that the proportion devoted to grain in some form is respectively $\frac{2}{3}$, $\frac{3}{4}$, and $\frac{5}{7}$. Such lands are called "wheat and bean land," because they are most suitable for these crops. They are unsuitable for the growth of turnips and swedes for two reasons. *First*, the difficulty and expense of obtaining a sufficiently fine tilth in the spring and early summer; *Secondly*, because it is troublesome, and often injurious, to cart off the produce in the autumn, and certainly injurious to consume it upon the land. The underlying reason for both of these difficulties is the plastic character of clay soils. They must be lightened up, being already too close in texture. It is fatal to success to plough or work them when wet, and consequently hauling or folding sheep upon them, as in some countries, is sure to be followed by a diminished wheat crop the succeeding year. Now, as the turnip and swede crop are grown with the idea of *improving* land, and causing it to grow a better grain crop, it is evident that on these stiff soils their cultivation cannot extend. There are, however, other fallow crops which may be grown upon clay lands. All forage crops which are eaten by live stock during the dry months, and are cleared off in time for wheat sowing in the autumn, are fit for clay soils. Such are winter and spring vetches, rape, and cabbages. All these crops are ready for use from May to the end of September or October. Stiff clay soils should, for the same reason, be manured with long or fresh manure, so that the decay of the straw and fermentation of the dung may open up and divide the soil. Autumn ploughing for fallow crops is also advisable, that the pulverizing effects of the winter's frost may be thoroughly realized.

Free soils are suitable for turnips and forage crops in general. They are defined in farming phraseology as "turnip and barley soils," because they grow both crops to perfection. It will be found that one-half of the arable land is usually devoted to each purpose, *i.e.*, grain and fodder crops. They are suitable for turnips, as they are readily reduced to a fine tilth. A policy of *consolidation* is noticed throughout the course of cropping. They are often intentionally ploughed wet for grain; the leas are heavily rolled or land-pressed before wheat is sown; the young grain is also rolled in the spring to press the soil around the roots; and the manure is preferred well rotted. Such land is ploughed shallow for grain, and stubble and haulm or weeds are raked together and burnt, rather than ploughed

in. All these precautions have one end in view, namely, preventing "hollowness" and promoting firmness.

General Effects of Grain, "Root," and Forage Crops upon the Land.

Grain crops exhaust the land (1) because they are sold off the premises; (2) because on account of the narrow spaces between the rows, and the length of time they occupy the land, they do not allow of the thorough destruction of weeds. Land long under grain crops is apt to become both poor and foul.

Root crops are well calculated to take the place of the old bare or naked fallow on a large class of soils. (1.) They are not sown until May, June, and July; and, therefore, allow ample opportunity for cultivation from the securing of the previous grain crops in August or September until next summer. (2) They do not thrive unless the land is fine and well-manured. (3) They are sown at wide intervals, and constantly hoed and kept clean during their growth. (4) They are consumed upon the farm, and therefore keep up the fertility and increase the manure heap. As the object of the fallow is to clean and enrich the land, it will be seen that its functions are in no way interfered with by the growth of the roots. If root crops were sold (as occasionally they are), they would be even more exhausting to the land than the growth of grain crops. On the other hand, if grain is consumed (as it sometimes is) upon the farm, as when peas or barley are ground up for stock, they may themselves be viewed as renovating crops.

Fodder crops are understood to be those crops grown for summer keep, and for the sake of leaves and stem, rather than for the root or grain Such are vetches, rye, clover, lucerne, trifolium, and rape. Some of them are sown upon the fallow selection, and others are used to divide two grain-crops, as when clover comes between barley and wheat in the Norfolk four-course rotation. Others again are mere "catch-crops," or stolen crops, as when rape, or even stubble turnips are taken after a wheat stubble, with the intention of providing extra keep in times of scarcity, or in the early spring. With respect to the first use of forage crops, they have been already recommended for clay lands. As to catch-cropping, or the taking of roots after vetches or trifolium, in the same season, we must remember that by so doing one great advantage of the fallowing season is lost, because the land is occupied with these two crops from autumn throughout the whole season. This seriously interferes with the proper

cleaning of the land. It is a plan often resorted to in order to obtain sheep keep, but it should only be practised when the land is clean, and if continued it is apt to render it foul.

Theory of Rotations.

1. When we compare the composition of some of our ordinary crops with each other, we find that the proportion of ash ingredients and nitrogen differ widely. This is in itself a key to one of the advantages of a rotation. If the same crop be grown year after year upon the same field, the soil is called upon to deliver up certain constituents in large quantities, while others are allowed to remain untouched. Turnips remove five times, beans three times, and oats twice as much potash from a soil as wheat. Oats require almost five times as much lime as wheat; and barley takes twenty-six times the amount of silica from the land as an equivalent crop of wheat. Such illustrations might be multiplied, but the above examples sufficiently show that a succession of crops must be a relief to the drain upon certain constituents.

2. Plants search for their food differently. A plant which feeds in the upper layers of the soil, like peas or barley, is not likely to exhaust land for deeper-rooted crops, such as beans or red clover. The contrast between the root distribution of wheat and barley has been noticed by Mr. Lawes and Dr. Gilbert, who grew these two plants in pots. Only one fibre of barley found its way through the bottom of the pot, but "the wheat threw out such a mass of ramifications that the whole surface of the dish in which the pot rested was covered with a thick network of roots, as also was the bottom, and to a great extent the sides of the inside of the pot itself. The barley roots were congregated near the surface, and were more sparingly developed.

3. Certain plants or crops are especially fitted to precede others. Leguminous crops, as beans, peas, and clover are, for example, excellent precursors of wheat. The reason is that these plants have a store of nitrogen available for the wheat crop, in the form of roots, and through the fall of the leaf during their growth. A good crop of clover assists in securing a good crop of wheat. Turnips and other root crops and potatoes are favourable to the after-success of grain crops. Hence we shall find in most rotations that the succession of crops is determined by the nature of the preceding crop.

4. Certain crops seem to injure the soil for other crops. As might be expected, crops similar to each other do not succeed well in succession.

Rye-grass is not a good preparation for wheat, and two white straw crops are not, as a rule, likely to succeed. Red clover refuses to grow after a previous crop or crops of the same plant, and it is well known that potatoes and turnips may be grown too frequently on the same field. This may be best explained upon the theory of rivalry for similar food constituents. De Candolle, the eminent French botanist, advanced the theory of root-excretions, to account for the difficulty of growing certain plants in succession, but the latest investigations upon this subject have yielded only negative results.

5. Besides the foregoing scientific reasons for varying the cropping of fields and following a well-devised rotation, there are several practical considerations which confirm their usefulness. (1) they promote cleanliness or freedom from weeds; (2.) They give a continuous supply of food for stock, as well as grain for man; (3) they divide the labour of the farm over the entire year; (4) give a system to farming operations; (5) and diminish a farmer's risks.

Abuses of Rotations.—They are, however, liable to abuse when unduly strained. No rotation can be suitable to all soils and to all conditions of the market, and therefore, a degree of latitude should be allowed, especially upon large farms, where soils and climates vary.

Influence of Soil in Determining Rotations.—The general outline of a rotation may be thus drawn:

Fallow : grain : forage : grain.

The fallow may be naked or cropped, and the cropping of a fallow is capable of many modifications, according to the quality of the land. Similarly the grain crops and forage crops will be selected according to the capabilities and adaptabilities of the soil.

On the most retentive clays wheat and beans will be the predominating cereals, and bare fallows relieved by the limited cultivation of rape, vetches will constitute the fallow portion.

On strong clay loams wheat and beans still hold their place, but the fallow will be cropped with mangels and part swedes, in addition to the crops cultivated on the stiffer clays.

On loamy soils any crop is suitable—a fact which makes them particularly valuable. Potatoes may be mentioned as especially suitable for this class.

On sandy loams and sandy soils, white turnips are more suitable than swedes in England, forage crops are very succesful, and these soils being easily worked are kept constantly under crop, and require the consolidat-

ing action of sheep during the fall. For such soils a system of catch-cropping is peculiarly suitable. Rye and barley will be found the most suitable cereals.

Calcareous soils are favourable to the development of those crops which require much lime. Among these may be mentioned the clovers, vetches, lucerne, peas, and beans. All these leguminous plants are in high favour in limestone districts.

Peaty soils will grow heavy crops of oats, and are well adapted for the growth of rape, while they are not suitable for turnips, or mangel.

Thin soils with rock near the surface, although naturally poor, are capable of growing a capital quality of barley, and are suitable for the winter feeding of sheep by folding, where climate allows.

Deep soils will grow carrots well, and are good for almost any kind of crop.

All soils are to some degree capable of growing all crops. Therefore we shall find it advisable merely to modify a rotation according to the leading character of a soil, and by no means to adhere exclusively to the class of crops mentioned as peculiarly suitable.

Rotations in practice:—The two-years' course being condemned as too short, led to a three-years' rotation. On good lands it was (1) Wheat, (2) Clover, (3) Potatoes, turnips, &c.; on inferior soils, oats and barley took the place of wheat. This rotation was favourable for cleaning the land, and yielded a large quantity of manure; but the proportion of fallow crop was too great for economy in working; and the clover would not bear such frequent repetition.

In some districts the three-years' course was (1) Wheat, (2) Turnips, (3) Spring grain. This was the opposite extreme, as it gave too large a proportion under grain crop; and being found too exhausting on light soils, clover was introduced between the spring grain and the wheat, the result being the old standard Norfolk 4-course—

1. Wheat.
2. Turnips.
3. Barley or Oats.
4. Clover.

In this rotation the grain and green crop alternate in equal proportions, and of the green crops one is a fallow and therefore a cleaning crop, and both are also ameliorating crops. The succession of the crops in this course is also such that the whole of the manure is made use of; those parts of it which are not fitted for one crop, furnishing nourishment for

another. This rotation if practised, more or less, in every country, and is not confined to light soils only; wheat and mangels on the heavier soils taking the place of barley and turnips.

The great value of this rotation is that it admits of endless variation in the cropping, without departing from its main features. Thus, instead of taking turnips every fourth year, interchanges may be made of swedes, mangel, carrots, potatoes, etc.; and instead of clover every fourth year, a crop of beans, peas, vetches may be taken, thus bringing in turnips or clover at intervals of 8, 12, 16 &c. years, instead of every fourth year.

A good example of the five years' course is—

1st year, Wheat.
2nd " Roots and Green Crops.
3rd " Wheat.
4th " Barley.
5th " Seeds.

Which, of course, is but the Norfolk course extended by the introduction of a second wheat crop before the barley, a practice which on land full of manure, will improve the barley while at the same time the clover is thus less frequently repeated.

The six-year rotations now practised may be represented by the following:—

That with the land two or three years under grass seeds —

1. Peas or Oats.
2. Wheat.
3. Roots.
4. Barley.
5. Hay.
6. Hay.

Owing to the increasing cost of labour and tillage, many farmers are now working on one or other of these crop rotations. Three years under grass seeds is common, and by this system half the land is under clover or grass, one-third under grain, and one-sixth under root crop.

The seven and eight is that which was adopted at The Ontario Experimental Farm, for the purpose of getting-up impoverished, dirty soil of various physical characters from gravel to clay loam:—

1. Peas.
2. Wheat or Oats.

3. Roots.
4. Spring Wheat or Barley (seeded).
5. Hay.
6. Pasture.
7. Pasture.

In England this would be—1. Wheat. 2. Roots. 3. Barley. 4. Peas. 5. Roots. 6. Oats. 7. Seeds.

A perfect rotation should include all those crops which the soil, climate, and situation of the farm will admit of being cultivated at a profit. The conditions which influence the species of crops grown, are (*a*) the nature of the soil, (*b*) the character of the climate, (*c*) the kinds of live stock kept, and systems of management, (*d*) the demand for certain crops, and the convenience for marketing them. Thus in regard to soils, clays are specially fitted to produce crops of wheat, beans, and mangels; light soils are favourable to the growth of barley, turnips, peas, and clover; and peaty soils may yield excellent crops of carrots, rape, and oats, &c. The conditions of climate have great influence on the cropping. A dry climate is more favourable to the cultivation of wheat, barley, and leguminous plants, than to the development of root or green crops. In moist climates the humidity of the summer is unfavourable to the growth of wheat, barley, peas and beans, but favourable to turnips, rape, grass, and oats; while a mild winter is favourable for growing early spring food, and market produce, such as rye, early potatoes, &c. In a mountain climate the comparative shortness of the summer season is more prejudicial to grain crops than to roots and grass. On humid elevations oats are the most suitable grain crop; whilst on dry soils, barley is more appropriate. Again, as to kinds of live stock, and management. Cattle require a greater breadth of straw and forage crops than of root crops to be eaten on the ground; sheep the reverse. Dairy stock require more of succulent green food than they do of dry fodder; fattening animals the reverse.

ORDINARY TILLAGE OPERATIONS.

Whatever the physical or chemical properties of the soil may be, it will produce but little if not well tilled. And what is true in this respect of the best soil applies in far stronger terms to the worst.

Apart from its immediate end, the provision of a proper seed-bed, the objects and effects of tillage may be enumerated thus:

(1) To stir and loosen the entire soil to a sufficient depth, so that the roots of plants may freely extend themselves in search of food.

(2) To pulverize the soil and mix thoroughly its constituent parts, so as to increase its absorbent and retentive powers, and to effect an equal and economical distribution of manure.

(3) To destroy weeds and foreign plants, which rob the crop of food and check its growth.

Let us add that, by opening the soil, and rendering it permeable to air and water, the inert materials contained in it, both organic and inorganic, are convertible into soluble plant food. And in regard to many of the insects which prey upon our crops, especially such as work beneath the soil at the roots of plants, frequent tillage is found to disturb them and bring them to the surface, where they get picked up by birds or die.

Tillage operations include all soil operations which apply directly to the cultivation of farm crops—ploughing, cultivating, harrowing, and rolling, or whatever else is done to bring land to a proper state to receive the seed. They also include the operations of hoeing and weeding the ground after it is sown.

Ploughing.—In ploughing we break up the ground into furrow slices, turning them over in such a manner that a new surface is presented to the atmosphere. This or some other mode of loosening and turning up the under parts of soils is necessary to fit them for the reception of the seed and the growth of crops.

The object of ploughing being to expose the upturned soil to the atmosphere and to create the greatest quantity of mould the furrow-slices can produce, it follows that the furrow-slice which shows the *greatest surface* will answer these ends most effectually. In the case of a square-cut furrow-slice this is found to result when it is laid at an angle of forty-five degrees; and to this end its width must be to its depth as about ten to seven. If the furrow-slices are ragged, open and broken, and if, being cut of various depths and widths, they are laid at different heights, the work is inferior. A uniform depth of tilth cannot be provided by the harrow, and the seed will be unequally buried.

The points of merit in ploughing are: (1) a straight furrow of uniform width and depth; (2) a clean cut slice, both on its land side and floor; (3) a well laid furrow-slice, having regard to compactness and form; (4) complete burial of the grass or stubble turned in; (5) a uniformly ploughed ridge: (6) a finish showing an open furrow with a clean narrow bottom, the last furrow-slice being equal in width and height with the others.

Cultivating or Stirring.—The cultivator merely stirs the soil and does not turn it over like the plough; but it can work to an equal depth. It is especially useful in a spring fallow after autumn ploughing, as the

winter-weathered tilth is thereby retained on the surface, and the moisture of the soil is less evaporated than when the land is spring ploughed—a point of the first importance in turnip cultivation. It is also much used in preparing light land just cleared of roots for being sown with spring grain and seeds, as it furnishes a fine mould and keeps the manure near the surface. Fitted with broad points, and worked at a shallower depth, the cultivator is the most effective implement in use for stubble cleaning after harvest. The substitution, when possible, of the cultivator for the plough is attended with a considerable saving both of time and labour.

Cultivators are adapted for either two or four horses, though the same implement which can be worked with ease by two horses on a light soil or at a shallow depth, will often require three or four horses on stiff land, or where deeper working has to be practised. If the nature of the soil and work admits of it, however, two horses in a light cultivator will do more than half the work of four yoked to a larger implement, as they step more freely and with greater ease to themselves. On light land, a two-horse cultivator should work five acres of fallow to a depth of about six inches, and four acres to a less depth on land where roots have been fed off; on stiff land, or working to a greater depth, a three or four-horse cultivator would do about six acres in a day.

Harrowing (1) pulverizes the soil to a depth of two or three inches, and reduces to fineness the surface clods and lumps that are left after ploughing or cultivating; (2) it shakes out and separates the weeds that are in the soil; (3) it smooths surface inequalities, by which means the seed is more evenly deposited and is more likely to have a uniform germination; and (4), after the seed is sown, the harrow buries it at a moderate depth beneath the surface. We might add a fifth use; for it is in many cases a good practice to harrow the winter-sown wheat in spring, and break up the weathered pan upon the surface. The usual direction of harrowing after seed is sown is first along the furrow, then across, and finally along again.

Rolling (1) breaks those clods or lumps which have resisted the action of the harrow; (2) it presses down surface stones, etc., so as to be out of the way of the scythe or reaping machine; (3) it gives a greater degree of compactness to soil which is too light and friable, making it firmer around the roots of plants, and at the same time a less favourable breeding-ground for many kinds of insects; while the smoother surface presents fewer points of evaporation; (4) it presses down and makes firm the ground about newly-sown seeds; and sometimes (5), when very small seeds are to be sown, it is well to roll the ground first, so as to level it

thoroughly and facilitate a more equal distribution of the seed than could otherwise take place; (6) it is used to press into the ground the roots of those plants sown in the preceding autumn which have been detached by frost.

A spring rolling on a field of winter grain will often, by firming the soil about its roots, save the crop; and it is equally beneficial in a similar way on grass lands. On light soils the loosening effects of frequent freezing and thawing are more or less avoided by an autumn rolling. Grass land cannot be too heavily rolled; and on all light lands under tillage the use of the roller is indispensable for closing the pores and preventing the evaporation of moisture.

But while rolling is much benefit on light, porous, and lumpy soils, it is injurious on wet clays, except in dry weather, when they are lumpy after ploughing. Rolling a stiff soil when wet renders it more difficult of cultivation, by pressing the particles still more closely together and preventing the admission of air. Even light arable lands require the ground to be dry when rolled, if for no other reason than that otherwise the soil will adhere to the roller. Grass land, however, is best rolled in showery weather.

Hoeing.—This operation is proceeded with while the crop is growing, and it fulfils two important objects. First, it extirpates weeds and keeps the land clean; and secondly, it stirs, loosens, and pulverizes the surface soil. The extirpation of weeds is of course indispensable to good cultivation. But the second principle of hoeing is if possible still more important. Deep and continuous hoeing is wonderfully effective in promoting the growth of plants. It prevents the soil reverting to its natural solidity, admits air and water, and by breaking and subdividing it, causes it to retain moisture and to present innumerable surfaces and fresh particles to the young roots. The effect is visible in the faster growth of the plants every time the earth is stirred about them.

Hoeing, however, can be practised in the case of crops in drills or in hills. Broadcast work is thus incompatible with thorough cultivation, even in the case of grain crops. If horse-hoeing is intended among the grain crops, the drilling should correspond with the horse-hoe to be used. Drilling is equally indispensable to all hand-hoeing.

Steam Cultivation.—In many cases tillage by the wealthy farmer may, in part at least, be advantageously performed by steam power. It (1) gives cheaper, deeper, and more efficient tillage than horse power; it (2) enables the work to be done rapidly and at the best season; it (3) enables land to be more quickly and effectually cleaned and kept free from

weeds; it (4) promotes good drainage by rendering tenacious soils more friable and porous; and it (5) not only effects a considerable diminution in the number of horses, but, by relieving them of their heaviest work, enables you to keep those which are still necessary at less expense.

Of the two main systems of cultivating by steam, the double-engine system necessarily involves the largest outlay to begin with; but where the farm is large enough to afford a reasonable amount of work for the tackle, it will cultivate at a less cost per acre than the single engine system.

Bare Fallow.—A bare fallow is one of the oldest modes of preparing soil for wheat. The soil is ploughed, and exposed a whole year to atmospheric influences, and finally sown with wheat. In the case of a clay soil, this treatment would probably lead to the following results:—1. An improvement in the mechanical texture of the soil. 2. The disintegration of some of the mineral silicates, whereby potash and other necessary ash constituents of plants would be liberated and made available for vegetation. 3. The absorption of ammonia from the atmosphere by the soil. 4. The receipt of both ammonia and nitric acid from the air in the form of rain. 5. The oxidation of ammonia, and of the vegetable remains in the soil, nitric acid being produced.

The production of nitric acid is probably the most important result of a bare fallow. In soils at Rothamsted left as bare fallow, there has been found at the end of the summer 34—55 lb. of nitrogen per acre in form of nitric acid in the first 20 inches from the surface. Supposing the season of fallow is a fairly dry one, the increase in the available nitrogenous food will probably enable the soil to produce twice as much wheat as it could do without this treatment. If, however, the soil is exposed to heavy rain, the nitrates produced will be more or less washed out, and the benefit of the fallow greatly diminished. Bare fallow can be used systematically with advantage only on clay soils having a considerable absorptive power for ammonia, and in a tolerably dry climate; under other circumstances a continuance of the practice must issue in a serious loss of soil nitrogen.

GRAIN CROPS.

Wheat.—The soil best adapted to the growth of wheat is a deep loam inclined to clay, with a dry subsoil—heavy land, more or less compact. Practically, however, nearly every kind of land, whether clay, loam, chalk, gravel or sand, will produce fair crops of wheat if in good condition, unless where the climate is really unfavourable for the purpose. It is not

the rainfall so much as the temperature that appears to govern the extent and prevalence of wheat-growing, for in some of the wetter districts capital wheat is produced. Wheat, as is well known, is more sensitive of temperature than any other of the cereals. Latitude, altitude, and exposure mainly regulate temperature.

A summer fallow is now less frequently resorted to as a preparation for winter wheat than formerly, and wheat generally occupies a place in the rotation following clover and roots. A fine tilth, which is so desirable for spring grain, is not specially required for autumn sown wheat, nor is a very dry seed-bed approved of. The time of sowing is very much a matter of local experience, and is more or less regulated by the weather and fitness of the ground. Middle of September, for Ontario, is the common seed-time. Bare fallows are, as a rule, seeded earlier. Light land is seldom too wet for sowing winter wheat, but when a good tilth is obtained on heavy soils it is better to sow than run the risk of wet weather setting in that might delay the work unduly.

The quantity of seed to be sown on the acre is very various and has given rise to controversy. That quantity is best which yields the largest crop, and the solution of that point rests on the experience of the individual grower. The answer depends on many considerations; the quality and condition of the land, the climate, the goodness of the seed, the time of sowing, and the mode of sowing. One bushel per acre may suffice where the conditions are all favourable; six pecks are a common seeding: and even three bushels may not be found too much under other circumstances. Whatever be the quantity, it is desirable that the ground be fairly occupied by plants when the spring and early summer growth commences. It is not now common to seed land so thickly as was done formerly, when broadcast sowing was common; but our forefathers were not fools, and if the plants had not stood close together in the days of weeds and wet land, the weeds would have over-mastered the grain.

In cold and elevated districts what is called "thin seeding" is never practised, and, as a rule, the most seed is sown on the poorer soils, as the plants on such land do not tiller, and therefore a greater number of roots are wanted. This has been controverted by ingenuous persons, who inquire, if ten plants require one foot of land to perfect their growth, what effect may be expected but starvation if twenty plants are grown on the same space? Experience, however, outweighs theoretical considerations. The plant when small and week occupies less space, and in consequence more stems or stalks are then required for mutual shelter and support;

and without a considerable number of straws the crop may break down before reaping time.

Grain is sown by drill and by broadcasting with hand or machine. Two bushels per acre broadcast is not in its result a thicker seeding than 1½ bushels if drilled. Broadcasting is the cheapest and most expeditious method of sowing; but the sowing of grain in rows by the drill has three main advantages over broadcasting, viz., the saving of seed, the ability to hoe the spaces between the rows in spring if necessary, and the deposit of the seed at equal and uniform depth in the soil. Eight to ten inches are the common distances between row and row. When of less width the intervals cannot be well hand or horse-hoed. Where there are no weeds to keep down, and where a baked surface only requires stirring and breaking, that can be done expeditiously and economically by the common harrow, and broadcasting may be perfectly satisfactory. Wheat stands, and even improves, under a considerable amount of rough handling in spring; and where the land is clean it is much the same whether it be sown broadcast or drilled.

Spring Wheat requires a soil similar to that of winter grain, but it should be of a quick and kindly character, as it has a much shorter time to mature. The ground should be well pulverized and fertile. The best crops are raised on land that has been ploughed in the fall, after roots were manured, and sown without additional ploughing, taking care to harrow in thoroughly. When planted early the wheat rarely suffers from the fly, as it attains a size and vigor beyond the reach of injury before it appears. In certain localities where the fly abounds and the wheat has not been early sown, it is found necessary to keep back the young plants till the disappearance of the fly.

Wheat of any class is ready for reaping as soon as the berry or grain is hard enough to yield no milkey juice when squeezed. The later stages of the ripening process do little else than thicken the bran coat of the grain and diminish its yield of flour. This subject has been thoroughly investigated by rigorous experiment, that both the quality and the quantity of the produce are improved by early harvesting. The crop is cut by scythe, by the reaping machine, or self-binder. The crop is set up in stooks or shocks, five sheaves on a side, with or without top sheaves for further protection, until it is dry, and it is then hauled to the barn or stack.

Barley.—The soils best adapted for barley are good turnip lands—calcareous, loamy, and friable—and the crop generally follows turnips.

The lighter soils in early districts are, however, the best adapted to the growth of the finer qualities of malting barley. It delights in a free open soil, being a shallow-rooted plant and a rapid grower, It requires a liberal supply of ready-prepared and easily assimilated manures within its reach, and thus is well adapted to follow sheep on the lighter soils. On the heavier soils, it pays well for a liberal dressing of artificial fertilisers. Superphosphate of lime, applied at the rate of 200 to 300 lbs. per acre at the seed time, is found to promote early ripening and productiveness.

It may be sown as soon as the ground is sufficiently dry in spring, on a grass or clover lay, turned over the preceding fall; or it may follow a well manured and cleanly hoed crop. If sown on a sod it should be lightly ploughed in, but not so deep as to disturb it, and afterwards harrowed or rolled. The soil should always be well pulverized. From two to three bushels per acre is the usual allowance of seed, poor and mellow soils, and early sown, requiring the least.

Oats.—In this country oats are sown at the rate of two to four bushels per acre during all the spring months, and sometimes, though rarely, in June. The seed should be well harrowed in and rolled, and no after attention is required except to destroy the prominent weeds.

Oats are better to be cut before they are fully ripe. When left till ripe the crop is very liable to be shed by a high wind. The straw of oats is far better fodder than that of wheat or barley, especially when they are early cut; indeed, sometimes the straw is almost as good as hay.

Rye is the hardiest grain cultivated, growing better than any other on the poorest sandy soils. It was once extensively grown in English agriculture, but its cultivation, except for use cut down green as forage, has much declined, though it is still largely grown in the Northern and Western States and Canada.

It may be grown on dry, poor and sandy soils, that will grow no other crop; and yet a rich sandy loam is most suitable.

It is sown in autumn at the rate of one to two bushels an acre—the smaller quantity when intended to stand as a seed crop, and the larger quantity when intended for early green food in spring.

The cultivation and harvesting of the rye crop is similar to that of wheat. When grown for forage it may be sown as early as August.

Corn (*Maize*).

The soil for corn must be dry, rich and well pulverized. Neither strong clay, wet, or poor lands, will yield good crops of corn. Land can scarcely be too rich for it, and the fresher and less fermented the manure applied to it is, unless on light, sandy soils, the better it will be for the crop. A great error is committed in raising corn, as with most of our tillage crops, from not having the soil sufficiently enriched; though this error is diminished in the case of such as will not bear an excess of manure. Corn is a gross feeder, and necessarily ranges over a great space in search of food. It has a large amount of stalk, leaves and grain to provide for in a few weeks, and its increase will be commensurate with the supply of food.

A clover lay, or rich grass sod is an excellent preparation for corn, with the addition of manure when required. But the manure should always be scattered broadcast, ploughed and well harrowed in. The roots will be certain to find it, and in consequence of its general diffusion, the development of the ear and grain will correspond with that of the stalk and leaves. When manured in the hill, on poor soil, it comes forward early, and this induces an extension of the roots, which finding little support, the crop is limited to the stalk and leaves, and a smaller proportion of grain.

Corn may be planted in hills from three to four and one-half feet asunder, and from three to five stalks well spread in each hill, according to the kind of seed, quality of land, etc. Some plant in drills, but this is objectionable, as the trouble of cultivation is greater, without increasing the yield. Thick planting gives fewer ears upon a stalk, and those of less size. The time of planting in the North is usually within the three first weeks of May, depending much on the season. Late frosts will sometimes cut down the first leaves without destroying the germ, but it is always best to defer planting till all apprehensions of it are removed. In the South earlier planting is desirable, and it is there put into the ground in March and April. To give regularity to the rows and facilitate after-culture, the furrows for the seed should be struck out each way with the utmost exactness, and twice the corn planted that is required to remain. It should be covered about two inches. The surplus plants can be pulled up at the second hoeing, when all fear of injury is past. If the land is light, it should be laid flat before planting, and after this it should be thoroughly rolled. Corn-planting implements, by hand and horse power, have lately been introduced to great advantage over the old way of hand and hoe planting.

The ground may be stirred when the plants first show themselves. This is most economically done with the cultivator or light plough, and if the operation be frequent and thorough, there will be little use for the hoe. Hilling or heaping the earth around the plants should always be avoided, except with very heavy soil, or such as is liable to an excess of moisture; in all other cases it should remain flat. Stirring the ground in dry weather is peculiarly beneficial to corn and all hoed crops. Some omit it then from fear of the escape of moisture, but its effect is precisely the reverse, as nothing so certainly produces lightness, porosity and unevenness in the soil, which, under the head of soils and draining, we have shown facilitated the admission and escape of heat, that inevitably secures the deposit of large quantities of moisture, even in the driest and most sultry weather. Corn and other crops, which were withering from excessive drought, have been at once rescued from its effects by a thorough use of the plough and cultivator. Well drained, dark coloured and rich porous soils will be found to suffer much less in drought than others which lack these characteristics.

HARVESTING.—If there be no danger of early frost, the corn may be suffered to stand until fully ripe; though if the stalks are designed for fodder they are better to be cut when the grain is well glazed, and this should be done in all cases where frost is expected. Scarcely any injury occurs either to the leaf or grain if the corn be stooked, when both would be seriously damaged from the same exposure if standing.

BUCKWHEAT (*Polygonum fagopyrum*).

Is a grain much cultivated in this country. It grows freely on light soils, but yields a remunerating crop only on those which are fertile. Fresh manure is injurious to this grain. Sandy loams are its favourite soils, especially such as have lain long in pasture and these should be well ploughed and harrowed. It may be sown from the first of May to the tenth of August, but in the North this ought to be done as early as June or July, or it may be injured by early frosts, which are fatal to it. It is sown broadcast at the rate of two to four pecks per acre, and harvested when the earliest seed is fully ripe. The plant often continues flowering after this, and when the early seed is blighted, as is often the case, the plant may be left till these last have matured. As it is liable to heat, it should be placed in little *stooks*, of the size of a two bushel basket, over the field and as soon as dry, taken in and threshed out. If not perfectly dry, the straw may be stacked with layers of other straw.

BEANS.—The bean is partial to a quick, dry soil, too great strength or fresh manuring giving a large quantity of vine without a corresponding quantity of fruit.

The land should be finely pulverized, and if at all inclined to wet it should be ridged. Beans are tender plants and will not bear the slightest frost, and as they grow rapidly, they will be sure to ripen if planted when this is no longer to be apprehended. The seed is exposed to rot if put into the ground in a cold, wet time, and the land should, therefore, be previously well warmed by the sun. The bush beans are the only kind used for field planting, and of these there are several sub-varieties, Early ripening, with field beans, is important, when other crops are to succeed the same season. They are usually planted in hills about two feet apart, and also in drills covered two inches with fine earth. They have been sown broadcast, on clean, dry soils, and produced largely. When planted in hills, from four to six plants should be left in each, according to their proximity, or if in drills they need about one and a-half bushels of seed to the acre.

When the beans are fully formed and there is any danger of frost, they should be at once secured, but this scarcely affects them when they are gathered and thrown into heaps. If the ground is not wanted for other uses, they may stand until the latest pods assumes a yellow colour. They are pulled with ease when the plant is mature, as the fibres of the roots are by that time dead. This is more quickly accomplished with an iron hook rake, or if the stocks are partially green they can be mown. The vines, if not dry, should remain for a while in small heaps, and afterwards collected in larger piles around stakes set at convenient distances, with the roots in the centre and secured at the top by a wisp of straw; and when well dried they should be threshed, cleaned and spread till quite free from dampness.

PEASE.—This legumen succeeds best in moderately light and friable soils of a loamy and calcareous kind, or where lime or chalk has been recently applied, in British experience. In Canada, a clay loam is well adapted to their cultivation, though a calcareous or wheat soil may be said to be a pea soil. When sown on a thin sod, the manure should be spread before ploughing. They should have a clean fallow, or fresh, rich sod. They are not affected by frosts, and can be sown as soon as the ground is dry, thus enabling to follow with fall wheat. Peas are sometimes sown in drill, but most usually broadcast, at the rate of two bushels to the acre.

Harvesting is accomplished by cutting with the scythe or the new implement called the Pea Harvester, which is attached to an ordinary mower, or, when fully ripe, so that the roots pull out easily, with the horse rake. When thus gathered into heaps and well dried, they may be threshed out and the haulm carefully stacked and saved.

The Potato.—The soils best adapted for potatoes are friable, sandy, and loamy. On such soils potatoes are often grown systematically and extensively as a staple crop in the rotation; but on strong tenacious clays with a retentive subsoil they do not thrive. Potatoes, however, have a wonderful adaptation to soils of various textures and composition. They do well on virgin soils and turfy land; and though subject to be cut down by early frost, and again to suffer in the tops by autumn frosts, potatoes are grown under a great range of temperature.

To produce abundantly, potatoes require a fertile soil, and if not already sufficiently rich, manure should be spread on the surface before ploughing. If a tough sod, it should be ploughed the preceding fall, or if friable it may be done just before planting; but in all cases the land should be put in such condition as to be perfectly loose and mellow. Hills are the most convenient for tillage, as they admit of more thorough stirring of the ground with the cultivator or plough. Medium size, split potatoes have been ascertained from numerous experiments to be the best for planting, and when seed is scarce, it is sometimes economical to quarter them. Six or seven eyes should be placed in each hill, or if in drills, the pieces should be planted ten inches apart. The distance both of hills and drills must depend on the strength of the soil and the size of the tops, some varieties growing much larger than others. Cover with light mould to the depth of four inches, and if the soil be light, leave the ground perfectly level; if cold, heavy or moist, let the hill or drill be raised when finished. Subsoil ploughing is a great help to potatoes. The sets cut from the seed end give a much earlier crop than those from the root.

When the plants first appear above ground, run the plough through them, and throw the earth over them two or three inches, and no injury results if the tops are partially or even entirely covered, in flat cultivation. The ground should be several times stirred before the tops interfere with the operation, but never after they come into blossom. If in drill, use a light harrow just as the plants appear, and afterwards horse hoe when required.

Harvesting and Storing should not be commenced until the tops are mostly dead, as the tuber has not arrived at full maturity before this time. They may then be thrown out of the hills or drill by a plough,

horse potato digger, or some hand implement. They ought not to be exposed to the sun for any length of time, but may dry on the surface in a cloudy day, or be gathered into small heaps with some of the tops spread over them, until freed from the surface moisture, when they may be stored. Those selected for seed should be placed in small piles in the field, or in thin layers in a cool, dry place in the cellar where the air is excluded, and no heating or injury can occur. Such as are intended for consumption may be put in dry bins or barrels in the store-room, covered with straw and dry sand or loose earth to prevent the circulation of air or buried in the field.

Roots.—Any man who is thoroughly acquainted with the best systems of growing root crops, and can put his knowledge into effective practice, is certain, under ordinary circumstances, to prove a good and successful farmer. The supply of manure, and, consequently, the continued fertility of the soil depend, to a very large extent, both on the skilful culture of roots, and on their economical consumption. The first thing calculated to secure the success of root culture is deep and effective working of the soil.

Deep ploughing in autumn or early winter, when the soil is tolerably dry, and effective spring working, calculated not only to give a deep stratum of fine earth on the surface, but to preserve the sap required to germinate the seeds readily, are essential parts of skilful root cultivation. It will be found of much advantage in many cases, to apply the farm-yard manure required for the crop, in the autumn season, rather than in spring. By spring-time it will be well rotted, and can then be properly mixed with the soil, in addition to having acted to mechanical advantage on the soil.

When the ground has been reduced to a sufficiently fine tilth in spring, and the weeds carefully checked, the next step is the preparation of the seed-bed. Sowing on the flat is common; and, in some of the dry counties where the soil is light, the system has its advantages. But, if the land is to be cleaned for a succeeding grain crop, or if a very heavy yield of roots is wished, there is no mode of management equal to that of sowing the seed in slightly raised drills, varying from twenty-seven to thirty inches in width.

The successful growing of root crops depends, to a large extent, on the skilful and liberal use of proper manures. The farmer dare not apply liberal dressings of forcing fertilisers to his cereal crops; for in the over-luxuriance of the straw, he is certain to diminish rather than increase their market value. With root crops, particularly turnips, the case is

altogether different. A turnip or mangel bulb is cellular in its formation, and, under good management, there can scarcely be any limit to its development. It may be said, that very large roots are in an abnormal state, and that, in producing them, we are running in the face of natural laws. If this is the principal objection to root culture, then we must either disregard it, or allow the plant to return, by a gradual course of degeneracy, to its original type, in which it will be altogether useless to the farmer. But the objection does not apply, practically, to either the turnip or any other kind of crop grown by the farmer. All cultivated plants are in an unnatural state, in one respect; and sometimes the cultivator who throws nature into the shade, is the most successful in his art.

Apart, however from keeping the land in an open and well cleaned state by repeated horse-hoeings between the rows in dry summer weather, the facilities afforded by the drill system for baring the bulbs a little of the soil around them are not to be overlooked. Every successful grower of the turnip knows, that while the roots which are deeply set in the soil are generally the most palatable, they are far from being the bulkiest or the most valuable in the aggregate. It is often of very great importance that the seed should be kept near to the manure, and yet not so near to any large quantity of it as to have its vitality destroyed. If the rootlets of the young plants can catch the manure just as soon as they appear, the crop comes away at once, and defies insect pests; but if they are some time before they find it, a very considerable loss may be entailed on the farmer. Very deep drills are, in all cases, objectionable; but particularly so, when only special fertilisers are to be employed. The better the latter can be mixed with the wrought soil, provided it is kept two inches or so, below the surface, the more satisfactory will the results be. In many cases, the chemical ingredients we apply to the soil require to be mixed with it, and changed completely in their nature before they can nourish plant life in a satisfactory manner. Hence, if phosphates, or other auxiliary manures are placed in the bottoms of shallow drills, that is without being sown broadcast—the turnip plants, in sending down their roots, are likely either to be checked in growth, or to rush into an unhealthy luxuriance. To this evil—that of gross manuring—perhaps more than any other connected with manures, may be ascribed the prevalence of finger-and-toe in the more highly farmed districts. If the soil is very light, and contains, as it is sure to do in that case, a comparatively small quantity of the alkaline silicates, it may not effectually cure the evil to mix the manures with it; but on loamy or strong soils, there is no fear of this being the case. Though the plants are very near to the

chemical substances applied as manures, yet if the latter are well mixed with the pulverised agillaceous earth, they will have no tendency to produce anything like grossness of structure.

The success of root culture is also, in a great measure dependent on judicious summer management. A delay, in moist growing weather of a week, or two, or even of a few days, in thinning the turnip crop, will frequently reduce the yield by several tons per acre. Or, if the thinning work is improperly executed, the result may be no better. It is an old saying that a farmer should never have the oversight of the workers who are thinning his own turnips. In all probability he will think that the crop is being spoiled by severe thinning, while the very reverse is the case. A considerable amount of skill is required to manage the turnip crop in a proper manner; and, without good management, the heaviest yield of the bulbs need not be expected.

Much of the success of root culture, in the best farmed districts depends on the careful storing of the crop, and judicious consumption of it by stock, in conjunction with grain. In this way, it will be observed, that the subject of root cultivation can never be treated altogether by itself; for it bears directly, and in a most important manner, on the economy of stock-feeding and manure making. Indeed, were it dissociated from the other branches of farm management, the whole practice of agriculture would require to be established on a totally new basis.

I trust the time is not far distant, when by good management in growing our feeding root crops, they may be increased in weight over the present standard at least from one-third to one-half. With such an increase, there would be an immense addition to the home-made manures of the farm; the soil would attain a higher state of fertility; the farmer's profits would be better; and the gross agricultural returns of the country would be greatly enhanced.

Turnips,—The soils best adapted for the cultivation of turnips are unquestionably those of a free working loamy character—a fertile well-drained loam. But it is on new land or freshly turned sod, that they are most successful. An untilled virgin earth, with the rich dressing of ashes left after the recent burning of accumulated vegetable matter, and free from weeds and insects, is the surest and most productive for a turnip crop. Such land needs no manure.

Taking the case of the lighter soils under ridge cultivation, and supposing the land to have been manured with fifteen loads of manure and ploughed under in autumn, ploughed in early spring, and since stirred by the use of the cultivator or grubber, preparation has now to be made for the seed time,

which is from 15th of June to 15th July in this country. The field having been thoroughly mellowed by grubbing, harrowing, and rolling—more than twice if necessary, the surface is finally left smooth from the roller. Now by hand, or special broadcast machine, give 150 lbs. mineral superphosphate, 150 lbs. gypsum, 200 lbs. find ground bone dust, and 300 lbs. salt, previously mixed. Drill immediately at 27 or 28 inches, and keep the seeding close to the drilling all the time. Four pounds of seed per acre is better than two, under almost any circumstances,—never grudge the seed, because much allowance has to be made for poor germination, drought, and insect enemies, and besides close neighbourhood gives an earlier start—if a more tender plant, which early thining helps to remedy. Horse-hoe early—twice if necessary before thinning, and thin before much bunching takes place. Nine inches from plant to plant is a good average In this operation the hand hoe removes all weeds left by the other. Allow the plants to rise from their—generally—recumbent position ere allowing any more cultivation, but as in moist weather much of the dirt is left a foot between drills, send the horse-hoe over again soon. A second hand-hoeing to remove "doubles," and new weeds in drills, with a final horse-hoeing before leaves meet, should complete Swede turnip cultivation.

Leave the crop as late into autumn as possible with the view to securing all the weight per acre—bulbs swell best during cool evenings and warm days. Ten degrees of frost will do no harm. In harvesting, top with a sharp hoe, pull up in dry weather with the hand, or a heavy wooden harrow having few teeth, and haul to pit or cellar at once. Some prefer leaving the top root on the bulb as having mostly some earth attached is better for long-housed cattle and sheep—contending that the greater liability to heat and rot is overborne by the extra health of stock. Pitting in the field is better, when properly done, than a poor cellar.

Mangel Wurzel.

The mangel crop is grown, to a greater or less extent, on every variety of soil ; but those best adapted to its successful cultivation are deep adhesive loams. Hot and dry summers are favourable to its success as a field crop. On all adhesive soils autumn cultivation is of the utmost importance.

During the early autumn, and whilst the land is still dry, a heavy dressing of farmyard manure should be applied, and ploughed under deep. The spring preparation for seeding is similar to that for turnips, and the special manures cannot be less, and should give at least 400 lbs. salt per

acre. Where practicable the ridge system of cultivation, in which the seed is planted along the top of a raised drill from 28 to 30 inches wide, is preferable, chiefly on account of the facilities afforded for deep and repeated stirrings of the soil.

The crop should be sown during the first week in May. Much in this respect depends on the season, soil and climate. In England as much as 12 tons of well-made farmyard manure applied during the autumn or winter ; and a mixture consisting of 500 lbs. of mineral superphosphate, 100 of kainite, 100 of sulphate of ammonia, and 300 of common salt per acre, is usually sown broadcast at seedtime and covered in by a turn of the chain harrow. If sown on the flat, the seed is deposited by the ordinary grain drill, to which a suitable seed box is attached. If on the ridge a drill specially constructed is employed. The seed being enveloped in a hard woody case or capsule, requires to be well saturated with moisture before the germ can escape ; and in order to facilitate germination the seeds are frequently steeped in water for a period of forty-eight hours before being committed to the soil. When removed from the water they are spread thinly on a floor in order to drain off the superfluous moisture. We then frequently use a sufficient quantity of finely-powdered charcoal to mix with it, and form a thin coating to each seed. When prepared in this way the seed vegetates much more quickly than when it is sown in an unprepared state. Six or seven lbs. is the usual quantity of seed employed per acre.

There are several well-known varieties in cultivation. On deep strong loams the Long Reds succeed well, and produce a great weight per acre ; but if overtaken by early frosts they suffer severely, as they stand high above the ground. The Red Globe is less productive, and better adapted for light soils ; the Orange and Yellow Globe are probably the most suitable for every variety of soils. They are hardy and heavy croppers, and for quality they cannot be surpassed.

Immediately the young plants, if on the ridge, have come into full leaf, and as soon as the weather is favourable, the horse-hoe should at once be set to work, at first only stirring the surface soil, but going deeper at each repeated operation. If on the flat, the hand-hoe should be early at work to keep the weed growth in check. The plants generally succeed best when singled or thinned whilst small : the best distance from plant to plant is 12 to 16 inches. When the plants have made considerable progress in growth it is frequently found that a dressing of 100 of nitrate of soda and 200 of common salt produced profitable results. The horse-hoe should be kept at work as long as the spread of the leaves will admit. The man-

gel crop may be grown successfully from transplanted plants, showery weather being chosen for the operation. Care should be taken not to double up the tap root when planting it, nor to dibble the young plant in too deeply.

Under ordinary circumstances the crop will be ready to harvest by the first of October. The work should be done in dry weather ; the roots are pulled up by the hand, and the tops may be either twisted off by the hand or removed by a knife. In doing this great care should be taken not to wound the crown of the root. During fine weather the roots are benefited by lying exposed several days before being stored. The chief danger is frost. Denuded of the protecting covering of their leaves, they are greatly injured if exposed to a sharp frost, even for a single night. None of the rootlets should be removed from the bulbs until they are required for use. On sound land they may be stored in small heaps in the field ; on strong land they are generally hauled off whilst the land is dry, and stored in cellars.

CARROTS.—These can be grown successfully only on deep, well-drained sandy loams. Deep cultivation is an essential point. The land should have a dressing of 12 to 16 tons of well-rotted farmyard manure applied in the autumn. The soil should be deeply and thoroughly stirred, the manure spread and covered in with a shallow furrow, and left in such a state as to require little labour at spring. The seed should be sown not later than the first week in May ; the necessary quantity of seed is 3 lbs. per acre. They are sown on the flat and ridge, in rows 16 to 20 inches apart. We (O. E. Farm) use from 400 to 500 of a similar mixture of artificial manures to that applied to the turnip and mangel crop. The hairy covering of the seeds causes them to adhere, hence the practical utility of mixing with dry sand before sowing. This operation is performed by mixing a quantity of clean sand and seed together, rubbing the mixture well between the hands ; it is then moistened with water and spread out on a floor, where it is turned over daily and watered when necessary. It may remain in this state for a week or ten days, or until it is on the point of germinating, when it should at once be sown. The chief object is to enable the young plants to get the start of the weeds, which, under ordinary circumstances, often smother the tender plants.

It is essential that the soil be deep and thoroughly pulverised. The slightest obstruction causes the plant to throw out lateral shoots or forks, which greatly detract from the quality of the crop. The plants when thinned should be set out from 4 to 8 inches in the rows, according to the

sort that is being cultivated. Horse and hand-hoeing should be vigorously carried on as long as practicable.

The crop should be ready for lifting by the middle of October. If the weather is fine and free from frost, the roots are the better for remaining a few days in the field before being hauled off. They are stored in heaps and if sand can be readily obtained, it is a good plan to mix a quantity with the roots.

HOPS.—Hops require a rich, and highly manured loam, elaborate cultivation, a sheltered position, and a suitable climate in order to success. The crop, worth sometimes more than the price of the land annually, provides in successful years such an addition to the revenue of any farm suitable for its cultivation that it is very apt to absorb to itself an undue share of the means at the command of the farmer; and the general agriculture of a district where this crop prevails is apt to suffer in this way. A sheltered field, of naturally suitable soil—deep, fertile, and well drained—should be selected. It is deeply ploughed, subsoiled, and manured in autumn. Cuttings, or shoots of any approved sort, which have been specially reared, are then planted in rows 6 feet apart, 4 being planted in every "hill," 6 feet apart in the rows. Some growers plant two or three hills with male plants in order to ensure the proper fertilization of the seed. This planting should be done early in spring. The wide interspaces are sometimes turned to account during the first year in the growth of potatoes or cabbages. Each hill has a short pole placed near it which is fixed before summer and to which the young vine is tied. There is rarely any produce the first year. The spaces are well cultivated both ways, and heavily manured—the richest farm dung and every available fertilizer being employed in quantities unknown in the case of any other crop. The ground is cultivated and manured in early spring, the hills severally tended with spud and hoe, useless suckers cut away, and the hills re-poled, this time with three longer poles to a hill. The intervals continue to be cultivated with a special horse-hoe; the bine is tied to the poles—perhaps three bines to each. The hills are properly earthed up with shovelsfull of earth in the end of May. There may be some trimming and pruning required in case of strong growth in June. And the hops are hand-picked as soon as fit, *i. e.*, at a stage of ripeness which is recognisable only by experience. They are carried to the kiln, dried, packed and sold. The poles are then stripped and stacked on the ground or under cover, and they are looked over, and replenished before spring comes round, when they are again required.

Sorghum Sugar Cane.—Like Indian corn, the sorghum is, in its roots, deep and wide spreading, and like that, requires a thoroughly drained, warm, free, and good soil to promote its sweet flavour—wet and cold soils contributing but slightly, or in a much less degree, to its development. It should be planted, too, at about the same season as corn, and receive frequent and clean cultivation. Heavy, unctuous barn-yard manure should not be applied to the crop, giving it too rank a growth. Well rotted, or compost manures are better, or it may be grown on soils succeeding a crop to which such manures have been previously and lately applied. Lime, ashes, salt, guano, and the phosphates generally, are excellent manures, giving a *medium* growth to the stalk, and promoting the development of the sacharine juice in a higher degree than the more stimulating *humus* of the heavier fertilizers. It is, in fact, a cultivation by itself, but no more intricate, or difficult, than that of Indian corn, the proper land being once selected; and as a general rule, good corn land will produce good sorghum.

Harvesting should be done before the first sharp autumnal frosts. The sorgho ripens unequally, or *unevenly* rather, some stalks being fit to cut a few days before others; but as it should not be left to fully ripen before cutting, this inequality in maturity, when favourably grown, is of no particular injury. It should be cut near the ground; the two top joints cut off and thrown aside, being too weak and crude in their sap to add to the quality of the cane below.

As soon after cutting as possible, it should be removed to the crushing, or grinding mill, and put under cover from storms, or the drying heat of the sun, and its juices be not tainted by mould, or too much dried by condensation, to be easily expressed. As soon after cutting as possible, the canes should go into the mill for crushing.

The grinding, evaporation, and its manufacture into syrup is a process by itself, distinct from its cultivation.

Flax.—Flax requires rich fertile land in good tilth, and in clean condition. It is generally taken after a grain crop. The stubble should be well cleaned and manured before winter, and grubbed, harrowed and rolled in the following spring, and from six to eight pecks of seed are sown in the end of April, either in rows eight to ten inches apart, or broadcast; and covered in by light seed harrows. It is of the utmost importance that good clean seed be used. The crop is hand-weeded in May. It gets into bloom in June, and may be pulled any time thereafter. If the finest fibre is desired, it should be pulled before the bolls or seed vessels ripen. But these are generally allowed to get brown and ripe before the crop is

harvested. It is pulled in handfuls, left to dry, tied in bundles, and either at once submitted to rippling for the separation of the seed, or stacked for after-treatment. After being separated from the seed—which is effected by pulling the heads, a handful of stems at a time. through the steel teeth of a comb, placed upright against a horizontal board, on either end of which an operator sits—the straw is rotted, either by prolonged exposure to the weather on the surface of any grass field, or, in a more rapid way by soaking; and that is either done in a stream or pond, or in tepid water in a vat, the mass of sheaves in the water being weighted so as to keep the top just below the surface. In this way the woody part of the stem rots. It is then dried, rolled to break up the dried stems, and scutched for the removal of the rotten "wood" and the seperation of the fibre.

THE CULTIVATION OF FORAGE AND GREEN FODDER CROPS OF THE FARM.

In order to have a full idea of the position of these either in "soiling" or as helps in mixed farming, the following paper by myself may serve all purposes :

We are accustomed to hear of the different systems of farming called grazing, grain-growing, root farming, dairy farming, and mixed farming in each and all of which the live stock go and come from field to field in summer, according to conditions of cultivation and the various modes of management.

In these examples the animals search for food, and must be satisfied with what they find within a limited area, thus differing from those in the wild state, only in having a more choice bite for a certain time, but with less variety and fewer successions of crops, for nature, after all our combination of science and practice, gives a more regular rotation of grasses and other herbage than the best of our model farming now-a-days.

Were we therefore to think of the summer management of cattle on the patriarchal plan of moving from place to place, or having the range of a common bush, we possibly could not improve upon them in the desire for more palatable milk and good beef, in moderate quantity, at the least possible cost. But comparatively new country though we be, our bounds are becoming keenly outlined, and every foot of land clearly defined. The day is not far-off—in Ontario at least—when every fence will have its own place economically, when every open ditch will be grudged, every

wide, private lane tightened up, every cairn of stones and swamp corner be greedily reclaimed, and every tree have its proper place on our farms.

As an agent towards such an end, the comparatively new and little understood system of cattle management called "*Soiling*" will have much to say ere long.

To show this in the most practical shape is my present duty. I desire distinctly to confine myself to the produce of certain crops used for this purpose as against the prevailing summer management of cattle, we call "*Grazing.*" It would be easy to bring in the important story of the use of auxiliaries in both cases, but to do so would complicate and take from the value of the comparison. Soiling, then, is the housing of cattle at all seasons, and distinctively, in our circumstances, from the middle of April to the middle of October, when all their food is taken to them from the fields in place of their being allowed to search for themselves.

First, what is our position in Ontario as cattle graziers? We have not yet secured the rich old pastures of England, rich as our soils are, because we cannot secure variety enough of grasses (which means fifteen to twenty kinds) to give a close bottom and offer that *succession of herbage* best for the health and growth of animal life. Our droughts, and especially our winters, are against this; we have rain enough per annum, but it is not distributed sufficiently to give the regular top-dressing so essential to continuous greenness. Here permit the remark that as we have ourselves been the cause of this irregularity of rainfall, and temperature to a certain extent, so it is left to us to make good the balancing of the things in nature that have been displaced—how and where the meteorologist and arboriculturist will explain by and by, for so sure as we are opening ourselves to the world's public markets so sure are we bound to leave no stone unturned in view of national eminence among them.

On an average of seasons, on putting a cattle beast to the field, without any grain or cut fodder helps, there is no going back, neither is there much progress in flesh making; there is growth of bone and muscle, but comparatively little finishing on the outside or inside. So then we can make the frame in the field but not complete it for the home or foreign market. In this respect, therefore, we cannot possibly compete at present with some other parts of the world. What applies to beef making applies to the making of milk.

With unreliable pastures for *continuous progress* in beef or milk productions, the question before us is how can we better ourselves? We have the soil, or soils, we have the indispensable sunshine, as also the irregular showers, and all the essentials towards the upkeep of fertility.

Have we the enterprise, or shall I call it the necessary common sense? Indeed, history, past and present, shows that with such a sunshine as ours, some nations would be in possession of an enormous agricultural wealth, by the simple economy of that sunshine in the production of repeated crops of fodder plants in one season, even from a bed of sand.

We want then to secure such a succession, or association of green fodders during six months of the year as shall secure the following objects:

1. An early cut.
2. Repeated cuttings of the same plant.
3. A sufficient number to offer an unbroken supply of succulent herbage.
4. Kinds to differ considerably in their constituent elements.
5. The largest possible produce per acre consistent with good husbandry (and this implies much).
6. High fattening and milking properties.

I have no desire to lengthen introductory remarks, and shall now submit for consideration, first a diagram, showing what crops, in our present knowledge of things, can be cultivated in view of these objects. In this we have the experience of different parts of Canada, and particularly that of The Ontario Experimental Farm.

As is well known, all animal life must have a change of food in order to secure health and the best production of flesh and milk, and so we are called upon to examine the nourishing values of these various plants as got month by month.

Rich old pasture, with its many varieties of grasses, is not only one of the most valuable fodders, green or dry, as is well known for milk-making, but it also takes a high place as an actual fattener for animals; for these reasons it is used as a standard for comparing other green fodders with and accordingly we shall adopt it on this occasion.

If then good pasture, with its full 1·00 per cent. of nourishing properties, is a standard of nature's making as improved by man for all the essentials of animal life, it must be important to see how far our ten kinds of special green fodders come up to this standard from month to month.

Lucerne leads with ·38; millet, second, with ·36; red clover having ·31 sainfoin, fourth, with ·28 per cent.

Three of these in April make a large start, therefore with an average of ·32 per cent., and it will be observed that all the early croppers are very much superior in their feeding values than those that come after June—millet excepted. There is then a range of no less than ·18—from ·20 in

the case of corn, up to ·38 in that of lucerne—and the fact of this difference in feeding value implies corresponding difference in the actual elements of the plants, so that we certainly have variety enough. I shall not labour my paper with any detailed chemical analysis, as I trust it is clear that along with the variety of plants, we have also a variety of elements for all healthy and rapid production of flesh and milk—the man of sience says so, and practical experience says so. Of course the mean of ·29 per cent. over the season is much below the standard of 1·00, and this again points to the help wasted by some form of grain—should higher excellence be desirable, although many good managements consider it really necessary to give grain for milk where green fodders are plentiful and various.

We have now, therefore, established two important things :

1st. That Canada can grow the necessary variety and quantity of green fodders.

2nd. That they are well adapted to the sustenance of animal life for the purposes in view.

The next question is what is the proper position of "*soiling*" in association with grain, root and hay cultivation, and what can be done on a farm, say of 100 acres ?

There can be no idea of recommending soiling alone as a separate system of farming in this or any other country, the essentials of life cannot be neglected, nor can the average farmer run the risk of reducing his income by placing all his faith in one or two articles of production only.

There must be provision for horses in hay and grain ; pasture for sheep and yearling cattle ; and roots, straw and grain for cattle, sheep and pigs in winter; and grain and potatoes for family use. By grain I mean wheat, oats, barley, and peas, and roots include mangolds, turnips and carrots. We have to deal with the following classes of crops in rotation :—

1—Roots.
2—Grain.
3—Hay.
4—Pasture.
5—Green Fodder.

The green fodders are divisible into—

1—Cereals, one-half.

2—Clovers one-fourth.
3—Foliage proper one-fourth.

On soil of an average texture, the best rotation in my opinion is ;—

1—Peas and *grain fodders.*
2—Wheat and oats.
3—Roots and *foliage fodders.*
4—Barley or wheat (seeded) and *clover fodders.*
5—Hay.
6—Hay.
7—Pasture.

The area of each class on 100 acres would be :—

1—Peas, 5 ; grain fodders, 9	14 acres.
2—Wheat, 5 ; oats, 10	15 "
3—Mangolds, 3 ; turnips, 6 ; carrots, 1 ; foliage fodders, 5	15 "
4—Barley, 5 ; wheat, 3 , clover fodder, 6	14 "
5—Hay	14 "
6—Hay and Pasture	14 "
7—Pasture	14 "
	100 acres.

GREEN FODDERS for Ontario—Their time, quantity, and value.

	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPT'R.	OCTOBER.	Number of Cuttings.	Tons per Ac. per Annum.	Hay Weight per Acre Tons.	Value per Acre. Hay —$10 Ton.
LUCERNE	.38	X .38	.38	.38	.38	.38	.38	4	16	4	$38
SAINFOIN	.28	X .23	.23	.28	.28			2	6	2½	14
RED CLOVER	.31	X .31	.31	.31	.31			2	7	1½	12
RYE		.31	.31			X		2	6	3	23
TARES and OATS	X[1]	X	1st .20 Sow'g	2nd .20 Sow'g				1	6[2]	4	10
PRICKLY COMFREY			.27	.27	.27	.27		3	10	2	14
MILLET		X[1]	X[2]	1st .36 Sow'g	X .36 2nd	Sow'g .36		1	3[2]	3	13
RAPE		X[1]		.25 X[2] 1st	Sow'g .25	.25 2nd	Sow'g .25	1	15[2]	6	19
CORN		X		.20	.20	.20	.20	1	20	10	50
CABBAGE and KALE			X		.21	.21	.21	1	12	6	31
Tons per Acre per Month	3	10	13	22	22	18	13	18	12½	4	22½
Value Green Fodders: Rich Pasture=100 ($10 per Ton.)	.32	.32	.29	.28	.28	.27	.26	Average value dry weight .$6.40 per ton.			
					X—Dates of Sowing.			" " green " ... 2.15 "			

In this diagram we have an exhibition of twelve varieties of plants from the middle of April to the end of October, in the order of earliness. Each horizontal bar represents one acre, and the time during which each plant can be cut and used on an average of seasons. The date of sowing is shown by a cross, and the number of times the same plant can be cut in one season is given in the first culumn after October. Following the latter information is the quantity of green fodder obtained per acre from any of the kinds all over the season, and adjoining, the weight of these in the dry or hay condition. The last column contains the value per acre of each kind, that value being regulated by the following circumstances :

Good hay from rich pasture is valued at an average of $10 per ton, and the feeding ratio or nourishing properties thereof stands at 100; taking these as standards—and they are now recognized as such—we would have this calculation, as regards, for example, lucerne :

If hay equals $10 per ton and a feeding value of 100, what is four tons of lucerne, the feeding value of which is .38. The answer is $38 per acre, and thus all over the different kinds we obtain their comparative values—the figures on the horizontal bars being the percentage of nourishing properties in each case.

The management of each crop and the characteristics of the several plants are treated elsewhere.

To recapitulate, by the plants sought for, we have, as regards an *early cut*, lucerne coming about the middle of April, followed by sainfoin a week later, and red clover at the end of that month, thus obtaining three tons per acre from three varieties during a time when moisture is plentiful and the temperature rarely below freezing point, the average bein gabout 50° and the maximum 70°. This is the welcome start of the season, after the five months of dry fodders, roots and grain.

Repeated or rather continuous cuttings of the same spot or plants, four from lucerne, twice from sainfoin, twice from red clover, twice from fall rye, and at least thrice from prickly comfrey; two sowings at different dates of tares and oats give other

two cuttings; two also by two sowings of rape, two from two sowings of millet, and one each from corn and cabbage, so that in all we have no fewer than 21 cuttings from ten varieties of fodder plants.

As many kinds therefore as should offer an unbroken supply of succulent herbage during the whole summer months, for without tenderness, freshness and regular supply we are not in a position to impress the value of this system upon the average farmer or dairyman.

On examining the diagram, there is no time of the six months during which there are less than three sorts on hand, and in some months as many as eight; and indeed in place of any want, the difficulty during July and August is to keep up with the succession of offerings before they become woody or matured.

It would not be difficult to add a few other fodders of less importance to this list, and especially to note the fact that on well-arranged farms, where root cultivation is a prominent feature, *mangolds* are generally in such quantity, and have come through the winter so fresh and good, that they are not finished until *June*—thus, then, a very valuable help to, it may be, the scant *early* green fodders.

I cannot recommend the practice—a very old one, now less necessary—of thinning and feeding the leaves of turnips and mangolds, during their growth, but the systematic and careful use of both bulb and leaves of those removed to make room for the permanent crop is another thing, and a very important auxiliary to what we are treating upon.

Of the various green fodder crops there would be:—

Lucerne	3	acres	producing yearly	48	tons.
Sainfoin,	1	"	"	6	"
Red Clover	3	"	"	21	"
Rye	2	"	"	12	"
Tares and Oats	2	"	"	12	"
Prickley Comfrey	1	"	"	10	"
Millet	1	"	"	3	"
Rape	2	"	"	30	"
Corn	4	"	"	80	"
Cabbage and Kale,	1	"	"	12	"
	20	acres	giving	234	tons.

per annum.

The system altogether then is practically one of five divisions, having equal parts of twenty acres under roots, grain, hay, pasture, and *green fodders.*

Taking a clay loam as the average texture of Canadian soils, it is obvious that a rotation of cropping agreeable to all sound theory and practice, and by which no exhaustion could possibly take place even under careless management, would be what is called the seven course, as

laid down in these notes. By this our green fodders would accompany the first, second and fourth divisions after sod breaking, so as to agree, and not interfere with systematic rotation and management over the whole farm.

The sod for one or two years' pasture is broken up and cropped with peas and *grain fodders*, these grain fodders being corn, tares and oats, millet and rye; the second year is wheat and oats in proportion of five and ten respectively; the third in roots with *foliage fodders* in the shape of rape, cabbage and kale, and prickley comfrey—all the latter as with roots proper, admitting of thorough cultivation, manuring, and cleaning, upon which rests the backbone of this system. During the fourth year grass seeds (of timothy and clover) are laid down with barley or wheat, and part, if deemed necessary, with *red clover* alone as the green fodder section of this division, and of course the fifth and sixth years are hay, with the exception of, say, one-half of the sixth as *pasture;* seventh year pasture.

In all this there is an *easy and luxurious* cropping, suitable to the best of mixed farming and according, with the "soiling" system under consideration. There is no excess of grain and hay, but thorough cleaning and strengthening of soils by root management, with sufficient rest (so called) by depasturing with sheep and young cattle.

The twenty acres devoted to green fodders, will on an average, give, under the best management, 234 tons per annum.

What Can be Done with this Amount on Green Fodders.

Allowing for waste, one cattle beast of average size, age and circumstances as regards fattening, breeding, or milking, will consume daily 100 lbs. of these green materials, along with such dry fodders and grain as may be considered desirable—more or less, of course, according to objects. For the six months named this means the maintenance of twenty-six head, or nearly one and one-third ($1\frac{1}{3}$) animal per acre. Now it is well known in Canadian experience that it takes fully three acres of ordinary pasture—not poor pasture remember, but well laid down timothy and clover, to keep one of such cattle in full progressive condition—either laying on fat decently well, or milking well over the average, no stinting or having the animals walking two miles a day over and over a twenty acre field in search of a bellyful.

We have then the striking difference of four (4) to one (1) meantime, in favour of "soiling," or against grazing, without allowing for any other

facts for or against. Were one-tenth of dry fodders—such as hay or straw—added to the green ones, six more animals can be maintained, but our present purpose is to follow the exact value of the soiling crops alone.

It is rare in these times to find more than fifteen head of cattle in all on a hundred acre farm, summer and winter. So, supposing that one-half of the soiled animals, in our example case, were for the butcher and the other half supporters of the dairy, there would be an additional five head of yearlings and five calves, with one bull and one score of sheep. The sheep and yearlings would be grazed, but the calves and bull housed and receiving part green fodders; these would be equal to four (4) additional average sized cattle, and so reducing the 26 to 22 head that can be maintained from twenty acres of soiling materials. Still additional to this would be what would or should be used for horses or pigs, so that altogether we arrive at the safe standard of 20 cattle, or one to each acre.

Soiling in Canada then is as three to one, and by the system which I have thus sketched it is plain that by simply setting aside 20 acres from the 100, so as not to interfere with the reliable and profitable farming called mixed, or alternate, we can fatten, or dairy, 20 cattle in place of 7 during the six months of spring, summer and autumn.

What now is the financial position in the system?

To this, sketch first the general management that would be adopted:—Upon a hundred acre farm such as I have introduced, one man with horse and cart can easily undertake the attendance in every respect of these 10 fattening cattle, 10 cows, 5 yearlings, 5 calves, 1 bull and 20 sheep. Any of the yearlings intended for breeding would be grazed during their second summer, but those for fattening should be systematically housed, getting one hour's exercise daily; the calves would also be under cover, the sheep on pasture of course. At the most then, the cattle man would have 30 head to be soiled. After feeding and cleaning up in the morning he has to cut and cart home 2,500 lbs. of green fodder, in two loads, for the evening use, and as all green fodders are better to be slightly "wilted," not heated, ere offered, he would thus have to secure another cut in the evening to be used for next morning meals.

FINANCIAL RESULT OF SIX MONTHS' "SOILING" FROM 20 ACRES.

10 fattening cattle: 108 tons green fodders at $2.15 (see diagram)	$232
Proportion of attendance	50
	$282

10 milk cows: 86 tons	$184	
Proportion of attendance	40	
Milking	20	$244
Total debit		$526
Increase on 10 fattening cattle $5 per head per month		$300
Manure (bedding inclusive) 60 tons		50
		$350
Milk from 15 cows: 180 days, 10 quarts at 1¼ cts	$225	
Manure 50 tons	40	
		$265
40 tons green fodder, supplied to other cattle		86
Total credit		$701
Balance to credit		$175

Twenty acres, under ordinary good pasture and seasons, will graze seven head of cattle:

Rent or value of 20 acres at $3		$60
Proportion of management		7
		$67
3½ fattening cattle for five months	$50	
3½ milk cows, 150 days, at 8 quarts	60	
Estimate value of manure left	10	
		$120
Credit balance		$ 53

In the case of "soiling" a clear profit of $175—and that of grazing $53—the one equal to nearly *three rents* per acre, the other hardly one rent.

I am handling a strict debit and credit account, and not speaking of so much flesh or milk revenue per acre, without charging what very few farmers do charge in estimating profits. All this, remember, without any help from bush or stubble pasture, and any roadside pickings—no meal, bran or slops of any sort, but the plain produce of the soil in each case.

Again, then, let us note that "soiling" in Canada means fully three times the profits of grazing, in addition to other considerations now to be examined.

Some of the Advantages and Disadvantages of Soiling.

1. Where land is a consideration there is a great saving of it by being enabled to maintain at least one cattle beast per acre in place of having to calculate on allowing three acres to graze one.

2. Where we reckon by the amount of fodder produce (soiling, or pasturing,) there is a large saving of food in avoiding destruction by cattle traffic.

3. Where we have apparently useless quantities of any kind of straw, chaff, and hay—good or poor in quality—they can be safely used in association with the moist green fodders.

4. We obtain fully double the quantity, and proportionately much more value of manure by soiling than by allowing it to have its own way in the field, the roadside, and the court. I am of opinion that were we able correctly to estimate the value of farm yard manure in connection with this matter of soiling of cattle there would be no concern on the part of the farmer as to any other form of profit. He would simply be so independent as to be able to throw all beef or milk into the bargain, or allow them to stand as the mere overflowings of a system that puts him in possession of all the past and future wealth of his fields. Would the day were here when we all knew how to *make*, how to *preserve*, and how to *apply* our cattle droppings.

5. The larger produce of flesh and milk on an average.

6. Gives greater variety of materials, allows uniformity in management, which gives greater comfort and health, and less liability of accidents.

7. But it requires greater care and intelligence to establish and maintain such a variety of crops; so, if this is to be put up as an objection to the system, we had better say beat at once. When any farmer begins to speak about "troubles," and first expense, and too much looking after of things, then the sooner he falls into the ditch the better; let him continue his successive crops of wheat, and give his cattle the range of all the farm, so as the earlier to convince him of the high life he is leading—an extravagant, selfish life, as well as a dangerous one.

8. It is well known in soiling experience that cows give a greater flush of milk from good early pasture than from having the food taken home to them. The change from winter confinement to the rich and plentiful crop of grass, along with the easy conditions under which they obtain it, does this; were this grass rush to continue there would certain-

ly be much less in favour of housing; but it does rarely keep up—and while there is not so much milk in April, May and part of June, there is a continuous flow, with no falling off through July, August and September.

MANAGEMENT IN CROPPING OF GREEN FODDERS.

1—SOILS: (limey), depth, dry, *rich subsoil.*

2—SEED: Lucerne, 20 lbs.; Sainfoin, 3 bushels; Red Clover, 20 lbs.; Rye, 2 bushels; Tares and Oats, 2 to 1 bushel; Millet, 1 bushel; Corn, 3 bushels; Rape; 8 lbs.

3—CULTIVATION: Broadcast, drilling, horse-hoeing.

4—MANURING: Liquid, Special, Fy. Manure.

ESSENTIALS: A rich soil, moisture and heat.

The Live Stock of the Farm.

BREEDS OF CATTLE,

THE DURHAM.

A PARTI-COLOURED race, once spoken of as Tees-water, sometimes Durham, but now almost universally called Short-horns. It varies in colour from dense red to pure white, and is found in all combinations of these two colours. Its skin may be all red or all white, or red and white in separate patches, or the colours may be blended together as roan, which itself may either cover the whole body or be distributed in markings on a white ground. Although many of the best Short-horns have been white, this colour is not commonly liked, and an endeavour is generally made to get away from white. Any appearance of black or grey is held to indicate impurity of blood; yet it is certain that black noses do occasionally occur even in herds of very fashionable breeding; whilst black tipped horns are a not uncommon blemish. But the breeders of

Shorthorns are less bound by restrictions of colour than are those of any other variety.

The date since which the Short-horn has had a distinct existence has been disputed. The foundations of the breed were assuredly laid many years before it obtained any universal popularity. It certainly existed in the valley of the Tees quite in the early years of the last century, if not before; and visitors to Durham and Yorkshire, as far back as 1700, brought back wonderful stories of the size, weight, and yields of milk, obtained from Teeswater cattle. The variety is believed to have been produced by crossing a very large white breed (of whose origin there is no very definite account but which still lingers in places) with some local cattle which the rich pasture, enjoyed through many generations, along the banks of the Tees, had caused to become unusually fine. The brothers Robert and Charles Colling, of Ketton, have become associated with the reputation of the Short-horn to the entire exclusion of older breeders. When in 1820 a committee was appointed to obtain pedigrees, with a view to establish a herd-book, the committee accepted a connection with Messrs. Colling's herd as being sufficient to establish the position of any candidate for registration: and comparatively few pedigrees got inserted in the first volume which do not trace to a cow bred by one of the Messrs. Colling or to an animal bought from them. Their names are thus part and parcel of the pedigrees of the entire breed.

For some years past considerable rivalry has existed between the admirers of two different strains of Short-horned blood—to wit, that derived from Mr. Bates' herd and that which is possessed by the Messrs. Booth. Thomas Bates, of Kirklevington, dispersed his herd in 1850, at which time it was unequalled by any other in existence—magnificent size, straight and broad back, arched and well spread ribs, wide bosom, snug shoulders, clean neck, light feet, small head, prominent and bright but placid eye; hide sufficiently thick to indicate excellent condition, its extraordinary elasticity, together with the soft furry texture of the coat evidenced, throughout the herd, excellent quality of flesh and disposition to rapid fattening.

The Booth family have been long celebrated as breeders of Short-horns, but of late years their herd has become especially famous, not only on account of the numerous honours obtained by it at the national shows, but also from the great improvement which the Booth blood makes in a herd. The far-famed Booth herd was commenced about 1790, by Mr. Thomas Booth, with well selected cows of the then existing Short-horns, which he put to the best of Robert Colling's bulls, among which was Twin Brother

to Ben (660). After these he used Son of Twin Brother to Ben Suwarrow, Easby, and the Lame Bull.

Cattle of the pure "Booth blood" are distinguished by their mellowness, the depth and width of their fore-quarters, and consequent fulness of girth, the uncommon spread of their ribs, their good backs and loins; but they are sometimes deficient in style, and rather plain in the head, and coarse in the horn, which peculiarities were brought in by the Leonard cross, and came to him from Thorpe (2757), the sire of Leonard (Lord Lieutenant) having been got by Thorpe. The celebrated Favorite had something of the same defect, being rather coarse in his horn. The Duchess tribe, on the other hand, are characterized by a great deal of elegance in the head and neck, but this is accompanied with defects, such as barrenness in "the side of the chest," "shoulders rough and prominent in their points, and bare of flesh," as has been truly said by Mr. Carr. On the other hand, to use Mr. Carr's well chosen words, in a Booth animal, "the neck, fine at its junction with the head, increases rapidly, though not abruptly, in size until it melts insensibly into the shoulders and wide projecting brisket, which again blend imperceptibly with the crop, fore-flank, and ribs, without any depressions or protuberances. When the animal walks the elbow joint is scarcely, if at all, seen, and there is no hollow behind it. The motion of the shoulder-blades and shoulder-points is imperceptible, the former being laid snugly back into the crops, the latter hidden by the full neck vein, which blends with the muscles of the shoulder, neck, and brisket, forming gently tapering lines to the head and breast end." Now that the heat of rivalry has somewhat cooled down, and that the respective upholders of each of these famous strains of blood are prepared to acknowledge the merits of the other, it is considered that a judicious blending of the good qualities of each would be highly desirable; and such a union is, in fact, considered by several eminent breeders to be the very acme of Short-horn breeding, and is being practised as we write, November, 1883.

"The colours which belong to the Short-horn are rich red, pure white, and a mixture of the two in great variety, the most fashionable being a roan, more or less deep. A yellowish red is also occasionally met with, but it is not so much liked, although it prevailed at one time in some of the best animals of the breed; Hubback, for instance, was "yellow, red, and white." We have no right to object, therefore, to animals of that colour, on the score of purity of blood, although we have heard it done. Many dislike a white, but this seems rather a prejudice than an objection

OXFORD AND HAMPSHIRE DOWNS

which can be traced to good grounds. It has been justly remarked "that some of the very best of the improved Short-horns have been white ones."

The following is a description of the Short-horn breed, from the pen of Mr. R. Smith, in the "Journal of the Royal Agricultural Society:"—"He should have a symmetrical and compact form, of sufficient size, on shortish legs; the body should be covered evenly with flesh, of a mellow and elastic nature, yet firm enough and springy to the touch, following the fingers when the pressure is withdrawn; the forehead should be open, without a contracted air about it, and tapering gracefully to the muzzle; the eye prominent, yet placid; neck moderately long, nearly running into the shoulders, which should be well laid, gracefully fitting into the fore-quarters; the girth good over the heart; the fore-arm, where it joins the body, broad and tapering, with fine bone below the knee, and fitting level into the girth, and so maintaining a straight line along the whole animal to the extremity of the hip; the neck vein should be prominent and well filled up with flesh, running neatly into the shoulder-points, which should not be prominent, (*i.e.* rough), but well covered, and the muscle on the outside of the shoulder being well developed; the ribs should spring well and level from the backbone, increasingly so towards the back rib, which should be well home to the quarter—in fact, the space here (termed the false rib) should carry on in a straight line over the hip, gradually tapering on the side bones at the tail, but the quarter must be well packed not "scooped out," so to speak; the hip-bones should be dovetailed into the quarter and false rib so completely that one ought to be at a loss where to find them—*i.e.* they should not be too recognisable; the flank will then, as I have already said, be deep and full, forming a parallel line with the animal's back from the bottom of the girth; the back, again, from behind the top of the shoulder all along the vertebræ, should be well covered; the loins should be wide and thick; the edge-bone, or ridge, along the quarter should form a straight line in continuation with the back, and should also be well covered (which, in a great many animals, it very imperfectly is) to the same level: the twist should be straight down (square), moderately wide and deep, containing a great deal of heavy flesh, and the legs should be well under the animal; there should be a thick coat of mossy hair, not sharp, or what is termed wiry. Altogether, such an animal will have an ease and grace of motion as it walks which is only attained when the whole formation is in perfect harmony. There is, invariably, too, a style and grandeur of appearance unmistakably stamping the "high caste" Short-horn. Many well-bred animals will not feed level, but get patchy, which is fatal to them as show animals, however

stylish and fashionable in their outline. It is, therefore, indispensable that an animal should lay on flesh uniformly on every part, so as not to spoil the proportion of the several parts. Rough shoulders are always accompanied by heavy open shoulder-blades, and a slack bad girth, deficient through the heart as well as at the top of the plates immediately behind the shoulder. The animal is also sadly deficient in neck vein, being weak and ill-filled where it joins the shoulder-points. Again, however good an animal is in all other respects, it is imperative that the hind-quarter be well finished and neat; nothing proclaims a low-bred character so distinctly as an ill-turned quarter. If the tail is not neatly set on, failing to come well out to form the square at the twist, you may be sure something is wrong. While, however, the tail is well set on, and the side bones sufficiently high to carry the flesh fully up to the level of the quarter, there should not be any redundancy to mark and separate the rumps from the adjoining quarter. The hind legs must not be overlooked: if the hocks are too much bent, too long, or not well within the animal, it is a serious objection. The hind legs should be nearly straight, and well under the animal; this not only looks well, but is a mark of strength, as obviously as the reverse is one of weakness."

SCALE OF POINTS FOR SHORT-HORN BULLS, FROM THE AMERICAN HERD-BOOK.

	POINTS.
ART. 1.—Purity of breed on male and female side; sire and dam reputed for docility of disposition, early maturity and aptitude to fatten; sire a good stock-getter, dam a good breeder; and giving a large quantity of milk, or such as is superior for making butter or cheese - - - - -	7
ART. 2.—Head muscular and fine; the horns fine and gradually diminishing to a point, of a flat rather than round shape at the base, short and inclined to turn up, those of a clear waxy colour to be preferred, but such as are of a transparent white, and tinged with yellow, admissible; ears small, thin and covered with soft hair, playing quick, moving freely; forehead short, broad, especially between the eyes; and slightly dished; eyes bright placid, and rather prominent than otherwise, with a yellow rim around them; lower part of the face clean, dished and well developing the course of the veins; muzzle small, nose of a clear orange or light chocolate colour; nostrils wide and open; lower jaw thin; teeth clean and sound - - - - - - - -	5

ART. 3.—Neck fine and slightly arched, strongly and well set on the head and shoulders, harmoniously widening, deepening and rounding as it approaches the latter point; no dewlap. 2

ART. 4.—Chest broad, deep and projecting, the brisket on a lower line than the belly - - - - - - - - - - 5

ART. 5.—Shoulders broad, strong, fine and well placed; fore-legs short, straight, and standing rather wide apart than narrow: fore-arm muscular, broad and powerful, slightly swelling and full above the knee; the bone fine and flat; knees well knit and strong; foot flat, and in shape an oblong semi-circle; horn of the hoof sound and of a clear waxy colour - 2

ART. 6.—Barrel round and deep, and well ribbed up the hips - 4

ART. 7.—Back short, straight and broad from the withers to the setting on of the tail; crops round and full; loins broad; huckle bones on a level with the back; tail well set, on a level with the back, fine and gradually diminishing to a point, and hanging without the brush an inch or so below the hock, at right angles with the back - - - - - - 4

ART. 8.—Hind quarters from the huckle to the point of the rump well filled up; twist well let down and full; hind legs short, straight, and well spread apart, gradually swelling and rounding above the hock; the bone fine and flat below; legs not to cross each other in walking, nor to straddle behind - - - - - - - - - - - - 7

ART. 9.—Skin of medium thickness, movable and mellow: a white colour is admissible, but rich cream or orange much preferable; hair well covering the hide, soft and fine, and if undercoated with soft, thick fur in winter, so much the better; colour pure white, red roan, bright red, or reddish yellow and white. (A black or dark brown nose or a rim round the eye, black or dark spots on the skin and hair decidedly objectionable, and indicative of coarse meat and bad blood, - - - - - - - - - - 3

ART. 10.—Good handling - - - - - - - - - 4

ART. 11.—Sure stock-getter - - - - - - - - 4

ART. 12.—Stock when made steer, certain to feed kindly for beefers at any age, and make prime beef - - - - - - 5

ART. 13.—General appearance - - - - - - - - 2

Perfection - - - - - - - - - 50

Scale of Points for Short-horn Cows.

POINTS.

ART. 1.—Purity of breed on male and female side; sire and dam reputed for docility of disposition, early maturity and aptitude to fatten. Sire a good stock-getter; dam a good breeder; giving a large quantity of milk, or such superior for making butter or cheese - - - - - - - 7

ART. 2.—Head small and tapering; long and narrower in proportion than that of the bull. Horns fine and gradually diminishing to a point; of a flat rather than of a round shape at the base; short, and inclined to turn up; those of a clear waxy colour to be preferred; but such as are of a transparent white, slightly tinged with yellow, admissible, ears small, thin, and well covered with soft hair; playing quick, moving freely; forehead of good breadth between the eyes, and slightly dished; eyes bright, and placid and rather prominent than otherwise, with a yellow rim round them; the lower part of the face clean dished, and well developing the course of the veins; muzzle small; nose of a clear bronze, or light chocolate colour—the former much preferred; nostrils wide and well opened; lower jaw thin; teeth clear and sound - - - - - - - - 5

ART. 3.—Neck fine and thin, straight and well set on to the head and shoulders, harmoniously widening, deepening, and slightly rounding in a delicate feminine manner as it approaches the latter point; no dewlap. - - - - - 2

ART. 4.—Shoulders fine and well placed; fore-legs short, straight and well spread apart; fore-arm wide muscular, slightly swelling and full above the knee; the bone fine and flat below; knees well knit and strong; foot flat and in the shape of an oblong semi-circle; horn of the hoof sound, and of a clear waxy colour - - - - - - - 2

ART. 5.—Chest broad, deep and projecting, the brisket on a lower line than the belly - - - - - - - - - 5

ART. 6.—Barrel round, deep and well ribbed up to the hips - - 5

ART. 7.—Back short, strong, straight from the withers to the setting of the tail; crop round and full; loin broad; huckle bones on a level with the back; tail well set, on a level with the back or very slightly below it; fine and gradually diminishing to a point; and hanging, without the brush; an inch or so below the hock, at right angles with the back - - 4

ART. 8.—Hind quarters from the huckles to the point of the rump long and well filled up; twist well let down and full; hind legs short, straight and well 'spread apart; gradually swelling and rounding above the hock; the bone fine and flat below; foot flat, and in shape of an oblong semi-circle; horn of the hoof sound, and of a clear waxy colour; legs not to cross each other in walking, nor to straddle behind - - - - - - - - - - - 3

ART. 9.—Udder broad, full, extending well forward along the belly, and well up behind, teats of a good size for the hand; squarely placed with a slight oblique pointing out; wide apart; when pressed by the hand the milk flowing from them freely. Extra teats indicative of good milking qualities, but should never be milked, as they draw the bag out of shape. Milk veins large and swelling - - - 4

ART. 10.—Skin of a medium thickness; movable and mellow; a white colour is admissible, but a rich cream or orange much preferable; hair well covering the hide; soft and fine and if undercoated with soft, thick fur in the winter, so much the better; colour pure white, red roan, bright red, red and white, spotted roan or reddish and yellow and white. (A black or dark brown nose, or rim round the eye, black or dark brown spots on the skin and the hair decidedly objectionable, and indicative of coarse meat and bad blood) - - - - - - - - - - 3

ART. 11.—Good handler - - - - - - - - 4

ART. 12.—Sure and good breeder - - - - - - 4

ART. 13.—General appearances - - - - - - - 2

Perfection - - - - - - - - - 50

HEREFORD CATTLE.

The Hereford is a distinct and pure breed of great antiquity. Their early history is uncertain; but it is generally allowed that there has been a breed of cattle red and mostly with white face and markings for at least two hundred years in the county of Hereford and the neighbouring counties. It is asserted that Lord Scuddamore, who died in 1671, introduced cows of the red and white face breed from Flanders. There was also a breed of cattle known in Herefordshire that were "white with red ears,"

and so far back as the tenth century it is recorded that there was a law of fixed compensation to be paid for injury done by one prince to another at one hundred white cows with red ears and a bull of the same colour. And it may be fairly considered to be proved that the Herefords of to-day have sprung directly from the old breeds of the district, the old grey Hereford coming from the white cattle with red ears, an occasional white Hereford cropping up as an additional proof of this.

There used to be three distinct kinds of Herefords: the mottle-faced, the grey, and the red with white faces. The first-mentioned were usually the largest, but with great quality and good touch; the grey were good feeders, and of a medium size; while the red with white face usually were the smaller cattle, finer in bone, and altogether more taking to the eye; and these by degrees excluded the others, and now reign triumphant.

There is rather a prejudice against cattle of a light red colour; although the light red, as a rule, are of better quality and feed quicker than the dark red ones. The late Lord Berwick's cattle were usually of this light red colour, and they were always, as their descendants now are, celebrated for their quality and aptitude to lay on flesh. The early records of the breed show that they were carefully bred in 1766 by Mr. Tompkins and others. The Herefords of that period were of great size, and usually kept for working on the land and fed off afterwards.

One of the first who set to work to improve the Hereford type, and get them to mature earlier, was the late Mr. Knight, of Downton Castle. The Downton herd sprang from three of the best herds of that day—Mr. Tully's, Mr. Tompkins', and Mr. Skryme's. The last-named was characterized by the light red colour mentioned before as being usually the colour of Lord Berwick's tribe of cattle, which is descended in a distinct line from the Knight herd. The darker colour and signs of the old tick face come from the Tompkins blood, as his cattle were usually mottle-faced; and the Tully cross gave the greys for which Downton was so celebrated.

Such is an outline of Hereford history from the latter half of the last century up to about 1844. Most of the Hereford breeders of the present day follow the type set by Lord Berwick and Mr. Knight, and endeavour to get their cattle deep-bodied, heavy-fleshed, on short legs, and small bone.

The chief points to be looked for in a good Hereford are, first, that the colour should be a distinct red, not too dark or too light; white face and mane, also white face and belly—end to tail—and white legs as far as the

knee and hock, sometimes running up to the flank. The bull should have a good, masculine head, not too long, broad between the eyes, which latter should be large and prominent, with a mild look, denoting docility of temper; the horn should be of moderate length, springing straight from the head. The cow's head should be much the same, but finer, and her horns should have a mane and turn upwards slightly; they should be in both cases of a waxy white, although they are occasionally found tipped with black; the nose should be a pure white or flesh colour. The bull should have a good rise of crest, deep, sloping shoulders, well-developed brisket, straight back and belly line, wide loin, good springing ribs, moderately broad hips, tail well set on and falling in a plumb line to the hocks. The hind-quarters should be long from the hip backwards; the thighs, which are a very important point, should be large and full, showing plenty of width across when you stand behind, and they should be well meated to the hocks; the whole carcass should be set square on good, short legs standing well apart, and be covered with firm flesh of good quality, and a mellow hide of soft but not too fine hair, giving the impression when you touch it, that it will stretch to any extent.

The Devon.

There are two types of the breed,—the North Devon being smaller than those fed on the rich lands of Somerset. Mr. Francis, of Quartly, has the honour of being looked upon as the introducer of this breed, and nine-tenths of the present herds are descended from the Quartly stock. In South Devon there is a mixture of the pure North Devon with a larger breed of the same kind called the "Old Marlborough Red," which is said to have descended from the South Molten stock. "In the North Devon the head is small, clean, and free from flesh about the jaws; deer-like, light and airy in its countenance; neck long and thin; throat free from jowl or dewlap; nose and round its eyes of a dark orange colour; ears thin and pointed, tinged on their inside with the same colour that is always found to encircle its eyes; horns thin, and fine to their roots, of a cream colour, tipped with black, growing with a regular curve upwards, and rather springing from each other; light in the withers, resting on a shoulder a little retiring and spreading, and so rounded below as to sink all appearance of its pinion in the body of the animal; open bosom, with a deep chest or keel; small and tapering below the knee, fine at and above the joint, and where the arm begins to increase it becomes suddenly lost in the shoulder; line of the back straight from the withers to the rump,

lying completely on a level with the pin, or huckles, which lie wide and open; the hind quarters seated high with flesh, leaving a fine hair-ham tapering from the hock to the fetlock; long from rump to huckle, and from the pinion of the shoulder to the end of the nose; thin loose skin, covered with hair of a soft and furry nature, inclined to curl whenever the animal is in good condition and in full coat, when it also becomes mottled with darker shades of its permanent colour, which is that of a bright blood red, without white or other spots, particularly on the male; a white udder is sometimes passed over, but seldom without objection."

This description may be considered as a summary of the perfections as to the exterior appearance of the animal: what, under the same head, may be regarded as defects, appear first in the sudden retiring of the rump from behind the huckle to a narrow point backwards; the great space between the huckle and first rib; the smallness of the angle inwards at which the ribs appear to be projected from the spine or back-bone, often giving the appearance of a flat-sided animal, and in its being so much tucked up in the girth as to show an awkward cavity between the keel and navel, the line of which, it is presumed, should always be found to hold a position as nearly as possible parallel with that of the back from the withers to the loin. The animal is, however, generally well grown, and filled up behind the shoulder.

The Norfolk Poll, or Norfolk Red Poll.

The Norfolk Polled Breed, known as the "Norfolk Red Poll," is by some held to be the original breed of that county; by others to be the result of crossing with the polled Galloway cattle, large numbers of which, at a very early period in the history of the county, were imported into it. It would appear, however, from records recently disentombed from amidst the many connected with the county, that there was a true native breed or race of cattle having some of the peculiarities of the present breed. This original or county breed, if so it was, had, as the favourite colour, a deep blood-red, for the body, with a white or mottled face. They, however, had horns, but these were small, or at least middle-sized, and clean cut. The body was small-boned, but with good round barrel, set on short legs "well loined and thin thighed." The head was fine. This breed were good fatteners, taking on meat evenly, and finishing off at three years as freely as other breeds at four and five. They were hardy and were favourites with the grazier and the butcher. The present breed possesses, no doubt, the peculiarities of the Galloway, with which at an early period it was

crossed. It is held in high esteem, and there are, according to *The Field*, at least a hundred farms in the county in which fine herds of it are bred. The oldest herd is that established by Mr. George, of Eaton near Norwich, in or about the first decade of this century, and the most recent is that of Mr. Brown, Markham. Between these are the herds of Sir Willoughby Jones, Bart.; of Messrs. Hudson, of Quarles Gamley and Blakeney; Mr. H. Birbeck, Stone, Holy Cross, &c.

The following are the points of a superior animal, as laid down by English breeders:

Colour—Deep red, with udder of the same colour, but the tip of the tail may be white.

Nose—neither dark nor cloudy.

A neat head and throat.

A full eye.

A tuft of hair should hang over the forehead. The frontal bones should begin to contract a little above the eyes, and should terminate in a comparatively narrow prominence at the summit of the head.

In all other particulars, the commonly accepted points of a superior animal are to be taken as applying to the Norfolk Red Polled Cattle.

"The Suffolk Poll," or "Suffolk Dun."

The "Suffolk Polled Cattle," known frequently as the "Suffolk Duns," so far as their history can be traced, has been a polled breed from the earliest period in the history of the county. The colours usually met with are light dun (hence the above name), red and white, or yellow and white. The hair is fine and silky, the skin thin; the cows are excellent milkers, the head in some being very fine, and the general outline showing indications of thorough breeding. As milkers, indeed, it seems scarcely to admit of a doubt but they are more valuable even than breeds such as the Ayrshires and Alderneys, which have, or are held to have, the highest reputation; and for this, if for no other reason, that they have not the tendency to "go dry," like the Ayrshires and Alderneys.

The steers have, on the whole, good form, the chines and back good; they are somewhat deficient in fulness in the front, this being narrow as compared with hind quarters. The cattle sent out by the best breeders to the various shows are such as prove the value of the breed; few but what are fit, in the words of an eminent breeder from another county, to "go to any show-yard." One peculiarity makes them very valuable to the grazier—their hardness, which enables them to fit themselves for a wide

range of districts, and to thrive in situations exposed to cold winds where other cattle would not do at all. This also helps them to improve even on such poor pasture lands that would be quite unfitted for the keep of cattle of other breeds.

The Galloway.

In the county of the same name, and holding the honour of having improved the Norfolk polls, the Aberdeen Angus poll, and even the Short-horn breed, is hornless, with sometimes a small *loose* excrescence, or "scur," resembling a horn. They are black, or a dark brindled brown, straight and broad in the back, and nearly level from the head to the rump. They are round in the ribs, and also between the shoulders and the ribs, or the ribs and the loins. They are broad in the loins, without any large projecting hook-bones. In roundness of bone and fulness of ribs they will compare with any breed, and also in the proportion of the loins to the hook-bones, or protuberances of the ribs. They are long in the quarters and ribs and deep in the chest, but not broad in the twist. The slightest inspection will show that there is less space between the hook and hip-bone and the ribs than in most other breeds, a consideration of much importance; for the advantage of length of carcass consists in the animal being well ribbed home or as little space as possible lost in the flank.

The Galloway is short in the leg, and moderately fine in the shank-bones, with a hardiness and disposition to fatten. No breed is so large and muscular above the knee, with room for a deep, broad and capacious chest; the neck is thick almost to a fault.

The skin is loose and mellow, and clothed with long soft silky hair, and handles soft and kindly, so much so that even on the moorland farms their hides little indicate the privations they undergo.

The West Highland.

The best Highland breed of horned cattle is reared in the western part of Scotland. The horns are large, sharp pointed, and upturned, and the colour generally black, though sometimes brindled or dun. The hides are thick and covered with long soft hair of a close pile, which nature seems to have intended as a protection against the severity of the climate under which they are bred, for they lose much of this distinction when reared in a southern country. In other respects they are not unlike the Galloway breed, many of whose best qualities they possess, and particu-

larly their hardiness of constitution, beautiful symmetry, and finely flavoured flesh. Their straight and level backs, their round and deep carcasses, and the quantity of good meat which they yield in proportion to their size, are most valuable points.

Of this breed there are several distinct varieties. The principal are the *Kyloes*—the aboriginal breed of Scotland, and existing in its greatest state of purity in the Isle of Skye. In Perth and Ross, and Argyle, the pastures will bear a larger breed, and it is in the latter county that the real *West Highlander* is to be seen in full perfection. The broad back, the short legs, the fine muzzle, and the black-tipped horns, the quality of the meat, and the quickness of the fattening, will sufficiently distinguish him.

The Rev. M. Gillespie, editor of "The Galloway Herd-book," says, "I think there can be very little doubt but that the Galloway and West Highland breeds of cattle have sprung from the same parent stock, at a very remote date. There is a close resemblance, even at the present day, between a well-bred polled Galloway and a West Highland *minus* the horns. Indeed the similarity is so great that when we bear in mind the fact that previous to the close of the eighteenth century, almost all the Galloways were horned, it is easy to understand how any difference between the two types may have been produced by the different circumstances in which they have long been placed."

The Aberdeen-Angus Poll.

There are but three prominent beefing breeds in the world: the Short-horn, Hereford and Aberdeen Angus poll.

Several others are eminent both in quality and adaptability to particular circumstances, but none of them have proved equal to these three in all that goes to make the modern model ox on pasture or in the stall. Angus, or Forfarshire, in Scotland, some fifty years ago, took up the important question of the improvement of its native cattle upon the principles then well known through the success of Short-horn breeders, and ere long immense progress resulted. Hugh Watson, of Keillor, was the principal agent and worker-up of all this. He was unquestionably the father of not only this branch of these polls, but necessarily, as we shall see, also of that of the Aberdeen line. These cattle were hornless, black, good milkers, somewhat stiff fatteners and good at living on "nothing" upon the somewhat bleak rolling pastures of Angus. The stamp of animal now on hand by Mr. Watson's skill and perseverance is consequently very hardy, grand graziers, fattening and ripening early on pasture, and, as a natural result of man's interference, also good as stall feeders.

The men of those parts and times were not indifferent to the illustrious Durham, as several purchases were already in possession of the more choice farms of the north of Scotland, but, in view of securing the more valuable characteristics of England's famous beefer, along with a *hardier* constitution, or one then supposed to be more suitable to the district, this Angus, or "Keillor Doddie" was established.

The growing importance of the Angus breed led the farmers of Aberdeenshire to consider the improvement of their own hornless black cattle, and in order to render this more certain and rapid, they made use of the larger and best specimens of the Angus.

William McCombie, of Tillyfour, stood pre-eminent in this work. His object was to secure a larger frame, and, if possible, a better stall feeder than the "Watson" type, in short, a "*Scotch Durham*," and he succeeded beyond all expectation.

These breeds had their separate herd books until three years ago, when, in consideration of their essential oneness, in history, points and characteristics, they were joined, and hence the new name, Aberdeen Angus.

At the present day, therefore, we have a polled or hornless breed of cattle, entirely black, with occasional spots of white on the belly an d udder a deep square frame, having all or nearly all the details that make up the, modern Short horn. With the exception, then, of the colour and horn, the Aberdeen Angus poll, is practically a Short-horn, but more able to do well on indifferent pastures, is as a whole better built behind the shoulder and arm, and decidedly better in quality of milk and producing good marbled flesh, though not so deep at the pail as the average Short-horn, nor probably so heavy when matured.

It is evident from the circumstances under which this breed has been established—those of hill-side grazing, little grain, and plenty of hay, straw and turnips, with severe winters and moderate summers, that for many parts of the world they are superior to the Short-horn and Hereford. They have every year during the last quarter of a century so successfully competed with all other breeds, that their extension in Britain and importation to most civilized countries is becoming a thing of common occurrence.

The Ontario Experimental Farm has had a herd of them for seven years, having been the first to introduce to Canada, and now extensive importation are being made to other parts of Canada, as well as the United States and Australia.

In view of the great field now open for the raising of cattle upon the prairies of North America, several importations are being made of the

best animals of this breed for the purpose of improving the common herds.

The head of the Aberdeen Angus poll bull should not be large, but handsome and neatly set on. The muzzle fine, nostrils wide, distance from nostrils to eyes of moderate length; the eyes mild, large and expressive; the poll high; the ear of fair size, lively and well covered with hair; the throat clean, with no development of skin and flesh beneath the jaws, which should not be heavy; the back pretty long to the shoulder tip, and surmounted by a moderate crest. The neck should pass neatly and evenly into the body, with full neck-vein. The shoulder-blades should lie well backwards, fitting neatly *into* the body, and not lying awkwardly *outside* it: they should show no undue prominence on the shoulder-top, on the points, or at the elbow. An upright shoulder in cattle is generally accompanied by a light waist—an important, and in all breeds a much too common, defect. The chest should be wide and deep, so as to give plenty of room for lung development. The bosom should stand well forward between the fore-legs, and underneath should be well covered with flesh and fat. The crops should be full and level, with no falling off behind them; the ribs well sprung, springing out, barrel-like, and neatly joined to the crops and loins; the back level and broad; the loins broad and strong; the hook-bones not too wide—narrower than in an average Short-horn; the quarters long, even, and rounded, with no hollow from the hooks to the tail. The tail should come neatly out of the body, not too far up the back, and not higher at the root than the line of the back. A high tail-head was to some extent characteristic of the ancient polled breed, but it is one of the defects that are being gradually removed by the more scientific systems of breeding now pursued.

Some good polled cattle, too, have been found to show a development of soft worthless flesh and fat on the rounds behind; but that defect, which is disliked very much, is also almost obliterated. The tail should hang straight down, close to the body all the way till it comes near to the level of the flank. On both sides of the tail the quarters should turn away in a rounded manner, swelling out downwards, and ultimately passing into thick deep thighs. The twist should be full, and the hind legs set well apart. and not detached from the body until the level of the flank is reached. The flank should be full and soft, so that a good handful may be got out of it. The bottom line should be as even as the top and side lines; and the bones of the legs fine, flat, and clean, with plenty of muscle and flesh above the knees on the fore-legs. The body should stand neatly and gracefully on the legs; and when the animal is station-

ary, the fore-legs should be perfectly straight, and the hind-legs very slightly bent forwards below the hook. All over the frame there should be a rich and even coating of flesh. Even the hook-bones, and other prominent parts, should be well covered; and above all, there should be no patchiness—no hollows, and no rolls of hard flesh, with spaces of soft useless fat between them, such as are always found in a patchy animal. Except in rare cases, the skin is fairly thick, but soft and pliable; it ought to be so free over the ribs, as that one could fill one's hand of it.

The hair is, as a rule, not long, but fairly thick and soft; and in the best animals shows two growths, or rather two lengths—one short and thick and the other longer and thinner. When walking, a good animal of the breed presents a very compact, graceful, and symmetrical appearance. Indeed it is fairly enough claimed for the breed that in these and some other respects it has hardly any equals, and no superiors. The above description refers more correctly to bulls than to cows. The latter, of course, differ considerably in character. The head is much finer, the neck thinner and cleaner, with no crest; the shoulder-top sharper; the bone altogether finer, the skin not quite so thick; the udder large, and milk-vessels large and well-defined.

The Ayrshire Breed.

In Ayrshire, an adjacent portion of the Lothians, this had its origin. At some period or other there has evidently been a cross of the Durham or Holderness, and perhaps also of the Alderney, used in perfecting their milking properties, and they have been established as a distinct breed for over one hundred years.

The following is from a report to the Ayrshire Agricultural Association, and gives the "points" which indicate superior quality in the Ayrshire dairy cows:—

"Head short, forehead wide, nose fine between the muzzle and eyes, muzzle moderately large, eyes full and lively, horns wide set on, inclining upwards, and curving slightly inwards.

"Neck long and straight from the head to the top of the shoulder; free from loose skin on the under side, fine at its junction with the head, and the muscles symmetrically enlarging towards the shoulders

"Shoulders thin at the top, brisket light, the whole fore-quarters thin in front, and gradually increasing in depth and width backwards.

"Back short and straight, spine well defined, especially at the shoulder, the short ribs arched, the body deep at the flanks, and the milk veins well developed.

"Pelvis long, broad, and straight, hook-bones (ilium) wide apart, and not much overlaid with fat, thighs deep and broad, tail long and slender, and set on level with the back.

"Milk-vessels capacious and extending well forward, hinder part broad and firmly attached to the body, the sole or under surface nearly level, the teats from two to two-and-a-half inches in length, equal in thickness, and hanging perpendicularly; their distance apart at the sides should be equal to about one-third of the length of the vessel, and across to about one-half of the breadth.

"Legs short, the bones fine and the joints firm.

"Skin soft and elastic, and covered with soft, close, woolly hair.

"The colours preferred are brown, or brown and white, the colours being distinctly defined."

Jerseys.

In the British Channel, between Great Britain and France, are a number of islands noted for their salubrity of climate and fertility of soil. Of late these islands—Alderney, Jersey and Guernsey—have become celebrated for their breed of cattle. They are undoubtedly of French origin Their colours are mostly light red or brown and black, mixed and splashed, with white. The solid colours are generally favoured.

Beginning with the head—the most characteristic feature—the muzzle is fine, the nose either dark brown or black, and occasionally a yellowish shade, with a peculiar mealy, light-coloured hair running up the face into a smoky hue, when it gradually takes the colour of the body; the face is slightly dishing, clean of flesh, mild and gentle in expression, the eye clear and full, and encircled with a distinct ring of the colour of the nose; the forehead is bold, horns short, curving inward, and waxy in colour, with black tips; the ear is sizable, thin, and quick in movement. The whole head is original and blood-like in appearance, more so than in almost any other of the cattle race, reminding one strongly of the head of our American elk. The neck is somewhat depressed—would be called "ewe-necked" by some—but clean in the throat, with moderate or little dewlap; the shoulders are wide and somewhat ragged, with prominent points, running down to a delicate arm and slender legs beneath; the forequarters stand rather close together, with a thinnish yet well developed brisket between; the ribs are flat, yet giving sufficient play for good lungs, the back depressed and somewhat hollow, the belly deep and large, the hips tolerably wide, the rump and tail high, the loin and quarter medium in length, the thigh thin and deep, the twist wide to accommodate a good sized udder,

the flanks medium, the hocks or gambrel joints crooked, the hind legs small, the udder capacious, square set, well formed and covered with soft silky hair; the teats fine, standing well apart and nicely tapering, and the milk-veins prominent.

FROM THE "ROYAL JERSEY AGRICULTURAL SOCIETY."

Scale of Points—Cows and Heifers.

		Points.
1.	Head,—small, fine and tapering	1
2.	Cheek,—small	1
3.	Throat,—clean	1
4.	Muzzle,—fine and encircled by a bright colour	1
5.	Nostrils,—high and open	1
6.	Horns,—smooth, crumpled, not too thick at the base and tapering	1
7.	Ears,—small and thin	1
8.	Ears,—of a deep orange colour within	1
9.	Eye,—full and placid	1
10.	Neck,—straight, fine, and placed lightly on the shoulders	1
11.	Chest,—broad and deep	1
12.	Barrel,—looped, broad and deep	1
13.	Well ribbed loins	1
14.	Back,—straight from within to tops of legs	1
15.	Back,—straight from top of hips to setting in of tail, and the tail at right angles with back	1
16.	Tail,—fine	1
17.	Tail,—hanging down to the hocks	1
18	Hide,—thin and movable, but not too loose	1
19.	Hide,—covered with fine, soft hair	1
20.	Hide,—of good colour	1
21.	Fore-legs,—short, straight and fine	1
22.	Fore-arm,—swelling, and full above the knee	1
23.	Hind-quarters,—from the hock to the point of the rump well filled in	1
24.	Hind-legs,—short and straight (below the hocks) and bones rather fine	1
25.	Hind-legs,—squarely placed, not too close together when viewed from behind	1

BLACK POLLED ANGUS

		Points.
26.	Hind-legs,—not to cross in walking	1
27.	Hoofs,—small	1
28.	Udder,—full in form, *i.e.*, well in line with the belly	1
29.	Udder,—well up behind	1
30.	Teats,—large, squarely placed; behind wide apart	1
31.	Milk-veins,—very prominent	1
32.	Growth	1
33.	General appearance	1
34.	Condition	1
	Perfection	34

No prize shall be awarded to cows having less than twenty-nine points.

No prize shall be awarded to heifers having less than twenty-six points.

Cows having obtained twenty-seven points, and heifers twenty-four points, shall be allowed to be branded, but cannot take a prize.

These points, namely, Nos. 28, 29, and 31—shall be deducted from the number required for perfection in heifers, as their udder and milk-veins cannot be fully developed: *a heifer will, therefore, be considered perfect at thirty-one points.*

To this we add:

One point must be added for pedigree on male side.

One point must be added for pedigree on female side.

Again, the size of the escutcheon, or milk-mirrors, is a point of especial attention.

In judging bulls, many of the same points will serve. The head will not be so small, and the forehead must be broad; the horns must be tipped with black; the neck, arched, powerful, but not too coarse and heavy hide thicker than the cow—certainly not thin—and mellow; fore legs short and straight, fore arm large and powerful, full above the knee and firm below it. As in cows, pedigree must have two points, one for purity of blood on the male side, and one for purity of blood on the female side.

Comparison of Breeds of Cattle in Canadian Experience.

In instituting comparisons between various breeds of cattle, it should not be overlooked that circumstances of climate, locality, and soil exercise an influence more or less marked upon their peculiarities, and aptitude for fattening and yielding milk or the reverse. The influence of the parents is also to be taken into account, and the way in which

these have been reared and fed, and the age at which they are used, and the state or condition of their health. The breeder if he is to be successful must indeed be perpetually on the look-out for circumstances—and these operating in a variety of ways, form a number, so to say, of directions—which are at all likely to exercise an influence good, or bad, as the case may be, on the qualities and peculiarities of his stock. Take, for example, dairy cows. The same breeders set up one class of animal as the best, to the exclusion of all others, without taking at all into consideration circumstances which naturally affect their milk-producing powers, just as if breed was everything, and food and housing were of no account. The two should, if possible, be made to work together. Breed is good, if it enables the dairyman to get meat out of his food; but it should be remembered, that both the quality and the quantity of the milk, and consequently to a large extent of the butter and the cheese made from it, depends more—at least largely, as will be generally admitted—upon the food than the breed. It is a fact well known to dairymen that some cows have not the slightest pretension to breed—so thoroughly mongrel are they—are those which give the largest yield of milk, and that of the best quality, when once they are put under proper feeding and management. As regards different breeds for the dairy, the most comprehensive and systematic accounts from anywhere are those which have resulted from the experiments of Professor Brown of the Ontario Experimental College. His description of breeds in their experience up to 1882 is as follows:

I have never seen, in all the necessary detail, a special work on the breeds of cattle most suitable for the dairy and creamery. The discussion of the subject is even not as plentiful as might be expected, amid all the keenness and ability of our Agricultural Associations. Dairymen are either satisfied with what they possess, or, may be, have been waiting for their Experimental Station to say something on such a big, irregular, and largely uncultivated field of enquiry. I think much of this indifference is only apparent, and not real, as *age* has not yet given Ontario opportunity to test what, under her conditions, are best for cheese and butter respectively.

To say that we cannot do better than follow what older nations are doing in this regard is admitting that the cow is but a machine devised to produce, irrespective of conditions that, we know, make and unmake higher animal life, and would at the same time be ignoring what we have already done in improving upon the practice of other countries in the making of cheese itself. It is our place as a young nation to prove as

we grow and establish nothing without thorough test—again and again. That this has been much of our work at the Ontario Experimental Farm is well known, and now I have the honour of submitting what various breeds of cattle there have said to the Province during the last seven years—what we get, and what we cannot get from each.

And first of all I desire to place on record that there exists no such thing as *General Purpose Cow*, as understood by many of us. There is no breed of cattle that will fill the butcher's stall, the milk pail, the cheese vat, and the butter can, as each should be done in these days—and must be done in order to the desired success. That some can do so to a greater measure than others we know, but that any one can, or ever will do so, and aggregate equal to the average of breeds, is just as certain as that cheese is not always cheese.

Even the world's work of these times is *specialities*, and not the one man fit to do many things well. Agriculture is speedily and surely dividing herself into grain, flesh, and wool, cheese and butter.

No two perfect and distinct products, as *now required*, can be got from any one breed of cattle or sheep under any sort of conditions, anywhere, however favourable.

I challenge any one to name a breed of cattle or sheep that gives an annual produce of two things equal to the like class of things, from two separate breeds that I will name. This provision of nature cannot be disturbed by all the science and art of man, and yet few things speak of the "Great Balancer" so beautifully as the well-known fact that when we give proper market value for all the points of all classes of live stock, no one set of them overtops any other to any material extent; thus, then, it is knowing what we want, and securing it.

The question for Ontario in regard to adaptability of breeds, is not exactly what characterizes them in their own lands, but what they are able to do after years of trial in the district requiring them. No influence is so strong as climate; food with Ontario is not a matter of any trouble comparatively, but the ability of individual breeds and animals to withstand the extreme of temperature is the great regulator of settling down to business. Of course there are in every breed certain inherent properties that cannot be driven out by any form of unsuitability—whether climate, food, or management and consequently we can build upon their perpetuation in a new land, with almost unfailing certainty, yet other things submit to physical conditions—invariably deteriorating—rarely improving.

Ontario has had sufficient experience of several breeds to place them exactly either for beef, milk cheese, or butter, and yet we are weak in knowledge of others that hold a good name in other countries. I refer particularly to the Holstein and Guernsey. This Experimental Farm should be in possession of these in view of information similar to what I am now about to submit.

What are the requisites of a first-class dairy cow, is the question before us in this enquiry. Men differ in their likes of individual animals for particular purposes, and much of this will be found to arise from experience under various conditions—that such and such a stamp of cow has done well or poorly, with either, where food, management, and the particular class of farm also differ. We forget this too often in comparing notes. The cow we want in Ontario for the dairy, on an average of all influences, should combine the following qualities.

An early maturer and breeder, giving her first calf when two and one-half years old, not to be a full milker before calving, necessarily, because of more trouble and deaths; a particularly warm hearted mother is not wanted—a whole week is sometimes lost by fretting—breeds and individuals differing very much in this regard. We want both quantity and quality of milk for the dairy and creamery; the cow must be a free milker, as in a herd of fifty the loss of *time* alone in one season would amount to actually *twenty-five days*. We should have nothing to do with a vicious cow whatever her points may be, as temper affects the very *quality* of the milk, not to speak of other drawbacks. We want, at least, twenty pounds of milk per day on an average for two hundred days a year. A strict culling out to even this moderate standard would surprise us as a province. We hear often enough of the maximums, and sometimes of the average per season, but never of the *minimums*. Specific gravity is no true indication of milk quality, and we have tried it by nearly three thousand observations on ten different breeds of cows within the last three years. More than this I do not require to say at present; neither is the *bulk* or volume—usually called per cent.—of cream of much significance. The weight of the cream from one hundred pounds of milk is the proper criterion, and our model dairy cow should always give eight pounds to the hundred. Then again, nearly one-half of that cream should be butter—a high standard no doubt, but as several items that go to make rich milk are largely in our hands, such a proportion can be attained unquestionably, I submit to better experience than ours, what cheese should be got from every hundred of milk—if I said eleven pounds, or

nine only, I might be asking what the management or the cow may not be able to influence.

All these desirable results require a certain machine, which we call a cow. Now, just as we build iron and wood to do certain kinds of work, we find in nature most clear evidence of cow machinery—usually called breed, and individual constitution—making very different milk from exactly the same materials, under precisely similar conditions.

Some remarkably good cows seem to bid defiance to all sorts of standards of points, but this does not militate from the value of a standard that is known to average all the virtues of cow life.

I have pleasure in drawing attention to a table that is the result of nearly *five thousand observations* with ten breeds and grades of cows during the last three years upon seven years' experience of the Ontario Experimental Farm, which, though not full, is yet of such extent as must at least interest anyone desirous of reliable information.

RESULT OF NEARLY 5,000 TESTS ON BREEDS OF CATTLE FOR THE DAIRY AND CREAMERY.

Breed.	Average weig't of Cow.	Dur. of milking season.	Milk per season.	Sp. Gravity of Milk.	Per cent. of Cream.	Cream by weight.	Butter from Milk.	Butter from Cream.	Cheese from Milk.	Value Per Season of Milk.	Value Per Season of Cream.	Value Per Season of Butter.	Value Per Season of Cheese.
		Days.	Lbs.			Lbs	Lbs	Lbs	Lbs	$	$	$	$
Shorthorn	1570	170	2550	97	$10\frac{2}{3}$	$8\frac{2}{3}$	$4\frac{1}{5}$	....	12	19	11	22	30
Shorthorn Grade	1450	220	3960	106	$8\frac{1}{4}$	5	$2\frac{1}{2}$	46	11	30	10	18	42
Aberdeen Grade	1300	170	2380	111	7	6	$3\frac{3}{4}$	40	$11\frac{1}{3}$	18	$7\frac{1}{4}$	16	27
Aberdeen Poll Grade	1150	190	3040	109	$4\frac{1}{2}$	$6\frac{1}{5}$	....	....	....	23	$9\frac{1}{2}$	....	....
Hereford	1340	180	2340	97	$5\frac{1}{2}$	$4\frac{1}{2}$	2	$50\frac{1}{4}$	$11\frac{1}{2}$	17	$5\frac{1}{4}$	11	26
Hereford Grade	1100	200	3570	106	$13\frac{3}{4}$	$6\frac{1}{2}$	$2\frac{1}{2}$	40	7	27	$11\frac{1}{2}$	18	26
Devon	1050	200	2800	113	$7\frac{1}{2}$	8	$3\frac{1}{2}$	....	$16\frac{1}{4}$	21	$11\frac{1}{6}$	19	45
Galloway	1250	190	2470	105	2	$6\frac{1}{3}$	....	....	$9\frac{1}{3}$	$18\frac{1}{2}$	8	11	23
Ayrshire	1000	210	5250	101	$6\frac{1}{2}$	8	$3\frac{1}{2}$	....	$11\frac{1}{3}$	39	21	34	58
Ayrshire Grade	1030	220	4400	102	$4\frac{2}{3}$	5	....	....	....	33	11	....	....
Jersey	740	200	2500	103	34	37	....	....	....	19	57	....	....
Canadian	950	240	4800	95	$6\frac{1}{2}$	8	....	....	$11\frac{1}{3}$	36	$19\frac{1}{2}$	29	54

The great beefer of the world, the Durham, is neither a heavy nor a long milker, comparatively, on an average, although some individuals,

in the experience of most breeders are remarkable in both qualities; in the days of their early history they were unquestionably deep and true milkers, but management towards a different object, has, during the last eighty years, changed their dairy standard. Though low in specific gravity, the proportion of cream is high, and the quantity of butter from the milk the highest of what is illustrated, and possibly second only to the Jersey, which, as yet, we have not had opportunity to investigate *thoroughly*. Even in cheese the Shorthorn is among the best. With this high average we would expect similar characteristics by the use of this breed with the native cows of the country,—whether one or more crosses, but the table shows no advantage in richness, though a very large increase to quantity of milk and duration of the season. This shorthorn grade is undoubtedly the nearest approach we have to what is termed a general purpose cow.

In duration of season and quantity of milk, the Aberdeen Poll is not equal to the Shorthorn, with which it is comparable as a beefer, and indeed it is the lowest of any in quantity, yet giving by specific gravity the richest of all excepting the Devon. But in fact nobody would look to the Aberdeen Poll for the dairy, though when put to the Canadian, we obtain much more prominence in milking powers with a distinct reduction in per cent. of cream, and yet, curiously enough, a fully better *weight* of cream.

The great beef grazier of England, the Hereford, is in no way better than the Shorthorn and Aberdeen Poll in milk quantity, but of any in our experience giving the largest amount of butter from cream—fully one-half weight for weight. Its grade is very prominent in advance of it, particularly so in proportion of cream, though one of the lowest in cheesy properties. I find on reference to a recent live stock text-book, published in England, that the Ontario Experimental Farm is credited with placing the Hereford Grade as a creamer.

Note, thus far, in disposing of the three greatest beefing breeds of the world, that value in fair measure, could not be got except from the Shorthorn grade ($25), on an average of things, and $20.50 from the Hereford grade.

In all our experimental research, no breed can touch the Devon in registering a high specific gravity and weight of cheese from milk, both are unusually high, and should be accounted for by the dairy expert. I now ask for this explanation. The Devon is also a good average in duration of milking, and, for its size, fair in quantity of milk, and, over an average

of things, gives $25 per annum—hence possibly the cause of its patronage in the States.

Scotland's hardy beef grazier, the Galloway, has made, in our comparaitvely small experience of it, at least one unusual record as a milker. I refer to the two per cent. of cream, which of course is a very low proportion, but it must be explained that the line between milk and cream was a very indistinct one, much cream stood below this line and always rose slowly, and much never separated from the milk; evidence, I believe, in any breed, of rich milk, so judgment in this case should be cautiously handled.

We have thus gone through what may be called the mixed field of beef and milk, and found but one example that would meet the dairyman's order.

The Ayrshire is unquestionably a heavy milker, long as well as deep, and on an average will give five times her own weight in milk per season. Observe the somewhat low specific gravity of it, however, and indeed, I may ask here how it is that all our true milkers—the Ayrshire, Ayrshire grade, Jersey and Canadian—record an average specific gravity of exactly 100, as against the prevailing high record of the beefers and the grades? From five to thirteen per cent. is a big difference in this respect. It does not mean thinness necessarily, for want of cream as in skimmed milk, gives a higher specific gravity, and pure cream, as is known, will go as low as fifty and thirty. The Ayrshire does not give cream, however, but stands above the average in cheesyness; thus, then, with its great quantity of milk, we get an average value, supposing we desire to obtain a milk, cream butter and cheese mean, of $38 a year, and, by a specialty as in cheese alone of $58 a year.

The Ayrshire, with the Canadian, making its grade, is not improved in any respect, in our experience, except one, that is, it continues longer in milk, making, however, a well-balanced dairy cow, on the hardy side, and suitable for some of our districts.

And now, what about the world's great creamer—the Jersey? The great point of this breed is that one-third of its milk, both in volume and weight, is cream, and so, on the basis of valuing milk at three-fourths cents per pound, cream at five cents, butter at twenty cents, and cheese at ten cents per pound, the Jersey equals the Ayrshire in giving $57 per annum. We have no experience of butter from Jerseys, but allowing the average of forty-four pounds of butter from the hundred pounds of cream as in our experiments, the Jersey would give $88 for butter according to ordinary price; but as Jersey butter is gold it would fetch actually $250

in place of $88! Shall we say then that this may be the only class where *thoroughbreds* would pay at high prices for ordinary use?

It is not because Canadian cattle—if there be such a thing really—are native only that they are placed in this list. I contend, without any fear of being unseated, that by a proper selection of this class of cows we obtain a higher annual produce for our ordinary dairy purposes than from any other in this record, and that they are best adapted to the present system of management. As a natural result of general agricultural progress—not special progress always—this special class of cattle will gradually disappear, and unless we supplement with something else—perhaps the Holstein, the Guernsey, or may be a less beefy stamp, by careful selection, of the Shorthorn grade, our dairy interests will suffer. I claim for what is called the Canadian cow, a better defined position, and a higher status than has hitherto been accorded to her. "Pedigree" is well; "blood" is good; but *milk*, at a dairy or creamery, is better than either of them.

Experience With some Breeds of Cattle in Ontario.

It would not be difficult to sketch the conduct and peculiarities of different breeds of cattle as known in their own habitat, but, what would be the use of such a presentation in comparison with the same thing in other lands? The value to us as Canadians is not so much what is realized in Britain, but how they conduct themselves under different circumstances, and particularly of Ontario.

Taking this view as the correct one, I cannot do better than present your Board with some brief notes on the experience of the Ontario Experimental Farm—an experience now embracing seven years under one man's management.

The Canadian.—I know of no class of cattle so well deserving a first notice in these pages as the Canadian. There is a distinct type entitled to this name. I do not mean those with a touch of Ayrshire, Devon, or any other—not even the Shorthorn grade—but that moderate sized, milking, wirey, active stamp, well known to the average farmer. If this be considered as somewhat indefinite, we shall be glad to point to specimens here or elsewhere.

I claim that the Canadian deserves more notice than has ever been given to it—public or specific—giving a recognised position that cannot be doubted. Have we on record anywhere such a description and history of the Canadian cow as that, when the time comes, as come it will, when the Herd Book editor will require materials with which to trace back to

the beginnings of what with him may be as eminent as any Bates or Booth in England? This is no improbable matter indeed, but deserves our serious attention.

Our experience of this breed has been intimate and very satisfactory. We hold by clear and substantial evidence for eight years that the Canadian cow takes no mean place as a milker, a mother, and a field for wide work both for beef and dairy purposes. Much of this is due to her distinct character in some respects: she is decidedly content with her average circumstances—miserable as they be at times—can do as well in the bush as on clover fields, and responds with her best when the thermometer is at zero or 90° in the shade. Her quantity of milk is not so large as the Ayrshire for six weeks after calving, but far ahead in continuance, and therefore, on an average, equal; in cream it is unquestionably superior to the Ayrshires. No one well acquainted with the breeds would choose the Ayrshire against the Canadian, where hardiness and profits under ordinary conditions were the elements.

So also in regard to a common source for cheap production of beef with a Shorthorn or Hereford bull. Other bulls have not as yet been sufficiently tried except the Ayrshire and Devon, which cannot compare with these two. While small as a beefer, the Canadian cow is roomy as a breeder, and thus affords field enough for such a purpose.

I am confident that a proper selection of the milking Canadian would add immensely to the dairy and beefing interests of the country.

The Devon.—The remarkable feature of the Devon with us has been an uniform conduct—no coming and going in anything, but an even run of breeding, health, and good doing under all conditions. Summer and winter the Devon is equally at home—plump on pasture, and in good heart in the stall without grain. They have also been particularly good mothers, nursing their calves in a manner superior to anything in our experience. The Devon calf is always a full calf on its milk alone—rolling in fat and with all the build of an old animal. The particular character of the breed and rich milk give these results. After weaning, and all up to heiferhood breeding there is a distinct heartiness and vigour, on the small scale as regards size; there is no stunting according to their kind, but one has to know the kind in order to appreciate the difference between them and the larger beefers. We have never got so much milk from a Devon, but in quality it is second only to the Jersey. The bull attains to a greater size and weight proportionately to the cow than the same thing in most other breeds, as his "get-up" is comparatively more of a beefer than, for example, the Ayrshire bull is against the Ayrshire cow. The Devon cow there-

fore is a milker in quality and moderate quantity, while the bull gives a frame to the steer that compares well with others for beef carrying. But the steer will not mature so early as the Shorthorns, Aberdeen Poll, and Hereford, or ever attain the same weight on an average.

The Ayrshire.—We have a pretty thorough test of the Ayrshire cattle. In pure breeding we have no cause to complain nor can anything be said against their adaptability in raising a calf. Every cow we have has to be milked three and four weeks previous to calving—an imperative necessity to avoid milk fever; after calving, two of our best have regularly suckled calves, and in addition have had to be milked with the hand twice daily for two or three weeks, depending upon time of the year, whether on grass or in stall. We have not, however, been treated to that continuance of milk that I was intimate with in the Lothians of Scotland—the great flow lessening more rapidly and dribbling too long. I do not attribute this to actual poorer pasture or keep otherwise, but to the great difference in climatic conditions and the want of that important variety of grasses secured only in permanent pasture. It is not true in our experience that the Ayrshire cow gives a lash of milk on comparatively bare pasture, in which regard she is, on an average, decidedly inferior to the Canadian, but it is true that her milk is of that blue type—not so rich in cream—as characterizes them in their own country. A cross between the Ayrshire bull and Canadian cow is in good repute as a milker with us; they do not lose in size of frame, and gain somewhat in long milking. A cross with an Ayrshire cow and Shorthorn bull has not shown any advantage in milking and very little in build for beefing, though the steer is vigorous and growthy, but too slab-sided and wedgy—taking too much after the mother, Practically then as regards the pure Ayrshire they require good treatment in order to maintain their famous milking properties, and I am of opinion that an infusion of new blood is as often needed as in any other breed—not so much a change of bull from any other herds in this country as that of a directly imported one.

The Hereford.—This breed has exhibited a very clear and steady line of conduct all throughout. No trouble in breeding, and no petting required. The Hereford is a good mother, second only to the Devon in our experience, and ahead of its dangerous compeers—the Shorthorn and Aberdeen Poll.

We have been charged with partiality and lack of practical experience in cattle life, by one of our American critics—especially in comparing Herefords and Shorthorns. This is not true, and I trust will never be so. As responsible to a Liberal Government, and guiding a grand country, it

is, above all things, our religious duty to report just how it is in every case—no colouring, no exaggeration, and no understatement of anything whatsoever. To say more, is unnecessary; to say less, would savour of want of interest.

The Hereford, I repeat, has shown an uniformity of conduct quite exceptionable along with the Devon; without grain, winter and summer—bran excepted, and the usual treat after calving. The Hereford keeps fat on pasture and in the stable, never falling off, even when suckling. Greedy enough, no doubt—down to the horse manure—not a specialty, as showing a want of something, but a consistent looking out for number one. We have no breed, as a whole, nor individuals among breeds, that can touch the Hereford in maintaining flesh on pasture. Indeed, we have cases of too much tendency to covering the ribs, and taking from the calf; and a peculiarity of their build is the being deep in calf and not showing it, as is otherwise in most other breeds—the calf also coming, without affecting the mother's appearance much.

The fattening steer, from the Hereford bull and Canadian cow, is quite characteristic. The marking is strong and unquestionable; the build is a Hereford in almost every detail, the pig ham (as age advances), the round, compact barrel, longish rumps, deep twist, and the general low, chunky set of the whole animal.

The Shorthorn.—We have never treated one breed of cattle or sheep differently from another, unless special circumstances demanded it; thus then, these comparative notes are the more valuable and reliable. I say this, here, because Shorthorn history, with us, has been more complicated than with other cattle; not, certainly, by reason of want of variety in blood and family, nor even numbers, to make a good average—for we have, or have had, plenty of both. With Shorthorn leanings, as an individual, I can freely and fearlessly, nevertheless, record how Shorthorns have conducted themselves with us for seven years.

We can speak highly of the milking properties—in quantity and quality—of the most of our cows of this breed, making good calves, or reliable milkers, as the case may have been. We have nothing to say against the sure breeding of the cows, but our four bulls, in these years, have not given satisfaction in this respect. Without exception, they have caused delay, loss, trouble, and extra expense. Why, I am not prepared to say,—two were imported and two Canadian bred; none were ever in such high flesh as those of some other herds; indeed we have noted, very distinctly, that those bulls, in best flesh—that is, on the heavy side, have been surer in getting than those on the less fleshy side. But, and I desire most

seriously, to make this "*but*," once and for all, understood, we have never fed Shorthorns differently from others; if we had done so, this would be no *experimental* station. Understand what I mean by this. If we have a two-year-old Shorthorn, with a large frame, weighing 1,600 lbs., and a Hereford, exactly of the same age and of a somewhat smaller frame, weighing 1,500 lbs.,—we feed them according to weight and size,—a little more to that weighing the most; this is in agreement with all rules of common sense as well as with science and physiology—not breed, because we do the same thing with individuals of the like breeds: *But*, we have never fed the Shorthorn, because he was a Shorthorn, nor the Hereford, or Aberdeen Poll, because of their kind. This is the true experimental idea, we think. If, 'tis said, the choice of individual bulls was bad, then the reply is, that three independent judges did so; if management by want of practical knowledge is charged, then the same management had to do with the other bulls that have stood so well. If the Shorthorn requires, on an average, more drawing-room attention than other beefing breeds, then it had better be acknowledged at once and I don't think their admirers need be ashamed of the fact.

We have fattened Shorthorn grades, Hereford grades, Devon grades, Ayrshire grades, and Galloway grades for beef, both in the stall and on pasture, and nothing equals the Shorthorn, in giving that stamp to produce weight in the shortest time on *Ontario conditions*—growth of youth on good pasture, and finishing in the stall.

The Aberdeen Poll.—We hold the honour of having introduced this breed to Canada as put by Mr. McDonald, the clever author of "Food from the West," as well as the recent work on Aberdeen Polls, and who is also editor of "The Irish Farmers' Gazette."

Our experience, thus far, is somewhat irregular: Health and breeding have been very good; milking sure, in moderate quantity and rich, with plenty of flesh both in stall and on pasture, yet we have to record an indefinite sort of instability, difficult to explain—I speak now of the first imported animals and their progeny, not of 1881 purchases. The instability in question has reference to a coming and going of health, especially in summer, as indicated by change of coat and general "staring" of the whole animal, as if going through a course of medicine. Individual animals of any class often do so, as everybody knows, but not a whole herd of one kind. There has been no sickness actually.

Some of the indications in the feeding, etc., of cattle, gathered by experiments at the Ontario Agricultural College, are thus summarized:—

1. Corn fodder newly cut and drawn from the field when green, cut into inch lengths, packed into a common rough stone root cellar half under ground, and weighted with 600 pounds per superficial square yard, can be preserved, except adjoining such a wall, for an indefinite time in a condition fit for animal food, at a cost not exceeding $1 per ton, exclusive of cultivation.

2. In competition with Swede turnips, ensilaged corn fodder gave fifteen per cent. less milk, thirty per cent. less butter, and a poorer marketable butter in colour.

3. *Damaged Wheat* can be very economically used in the fattening of cattle. Nine pounds per head per day, gave a daily increase of two pounds per head per day, at a cost of 4½c. per pound to the live weight.

4. *Rice Meal*, in the fattening of cattle, gave a daily increase of 1·81 pounds per head per day, by the use of six pounds per head per day, at a cost of about seven cents per pound.

5. *Barley Meal*, in fattening cattle, requires a large amount of other foods in association, and 11¼ pounds per head per day gave a daily increase of 2·14 pounds per head per day, at a cost of seven cents per pound live weight.

6. *Corn Meal* took the highest place in a daily rate of increase in the fattening of cattle; nine and one-fourth pounds per head daily, gave 2·31 pounds per head per day, at a cost of 5½c. per pound of the added animal weight.

7. *Pea Meal* gave the second best daily rate of increase at the least cost of all the regular cattle feeding grains. Eight and one-half pounds per head daily gave a rate of 2·28 pounds, at a cost of five cents per pound of the weight added to the animal.

8. A pure bred Short-horn steer can be brought to a weight of 1,700 lbs. when one month under two years old, or a daily rate of increase equal to 2½ pounds per day.

9. Hereford grade steer calves can be made to average 611 pounds in 238 days, or a rate of 2¾ pounds per day.

10. Aberdeen Poll grade steer calves can be made to average 720 lbs. in 273 days, or a rate of two and two-thirds pounds per day.

11. During winter a 1,000 pound steer will consume daily ten pounds hay, thirty-nine pounds turnips, four pounds bran, and nine pounds of a mixture of grain, upon which it will add 2·11 pounds to its live weight.

12. One pound of added weight to a 1,000 pound steer can be obtained from the use of various materials that contain eleven pounds of dry substances chemically.

13. By a large variety of experiments with several classes of cattle and many kinds of food, we find the actual cost of adding one pound to the live weight of a 1,000 pound animal is six cents to the feeder who grows his own materials, and nearly twelve cents when the food is bought in the regular market, manure and management not considered.

14. *Sugar Beet*, weight for weight with mangolds and turnips, and, in association with equal kinds and quantities of other foods, gave the highest returns in feeding cattle, or 2·70 pounds per head per day.

15. *Mangolds* gave 2·38 pounds per head per day under similar conditions to the sugar beet.

16. *Turnips* (*Swede*) added 2·30 pounds per day to the average steer that weighed 1,061 pounds under conditions similar to mangolds and sugar beet.

17. There is either a simple natural reason or a hidden chemical one in the fact that by the use of less grain and more roots, cattle gave a greater daily return in live weight. See special chapter herewith.

18. The present market for wool and mutton in Ontario is best supplied to the profit of the farmer by the Shropshire Down shearling grade, which gives annually fourteen per cent. more value than any other in our experience.

19. There is a remarkable uniformity in the annual value of wool and mutton from the grades of Cotswold, Leicester, Merino, Oxford Down and South Down, resulting from differences in weight and value of both products.

20. From nearly 5,000 observations the following notes have been obtained as evidence of peculiarities, characteristics or other indications of breeds of cattle :

(*a*) That there is no such class as a "general purpose" breed, one to do the best for the dairyman and the butcher.

(*b*) An average cow for dairy purposes should give 20 lbs. milk per day during 200 days every year; 8 lbs. of cream for every 100 lbs. of milk; 45 lbs. of butter from every 100 lbs. of cream, and fully 10 lbs. of cheese from every 100 lbs.. of milk.

(*c*) Bulk, volume, or per cent. of cream, is no safe criterion of the quantity of butter in that cream, weight alone is the proper mode of judging.

(*d*) *Breed*, as much, if not more than *food*, affects the quantity and quality of milk, cream, butter and cheese.

(*e*) In the Ontario Experimental Farm experience the Shorthorn is an average milker, short in duration per season, low in specific gravity, high

in per cent. of cream, proportionately high in butter, and also high in cheese production. The grade of this breed approaches the nearest of any others to what is called a "general purpose cow."

(*f*) The Aberdeen Poll is low in quantity of milk and the second highest of any in specific gravity. The grade of this breed is much improved in milking properties, giving a greater weight of cream, though a lower per cent. of it.

(*g*) The Hereford is not more prominent than the Shorthorn and Aberdeen Poll in regard to milk, except in proportion of butter from cream, in which it is highest. The grade is very prominently in advance, particularly in proportion of cream, but one of the lowest in cheese.

(*h*) The Devon is most distinct in highest specific gravity of milk, and the weight of cheese from milk. We have no experience with the grade of this breed.

(*i*) The Galloway milk appears to be of a peculiar texture—rich, or so small in butter globules as to rise very slowly and very indistinct in the test tube.

(*j*) The Ayrshire is a particularly heavy, long milker, giving five times her own weight per season. The milk is somewhat low in specific gravity and per cent. of cream, but is over the average in cheese production. The Ayrshire grade is not improved in any respect except in duration of milking season.

(*k*) The Jersey is remarkable for proportion of cream, averaging thirty-five per cent., and giving a value of dairy products, incomparable to any other breed in our experience.

(*l*) The Native, or Common Cow of Ontario, not Canada properly, because Quebec in particular stands distinct in her class of dairy cows, takes a high place in value of annual produce for ordinary dairy purposes, and, along with the Shorthorn grade, is peculiarly the dairy cow for the country.

SHEEP.—The British Isles possess at least twenty-five distinct breeds of sheep, all of considerable interest—at the same time not more than seven have as yet taken a prominent position in other parts of the world, and necessarily, to those, our descriptions will apply.

Sheep are classified according to the length of their wool, though they differ in other respects as much as in wool; for example, long-woolled sheep yield a heavy fleece, are heavier in weight, yield a somewhat coarse mutton, deposit fat thickly on the back, have white faces and legs, are well adapted for low-lying and rich lands, and require plenty of room.

Short-woolled sheep, on the other hand, yield a lighter fleece, are lighter in weight, supplying mutton of high quality. Their fat and lean are better mixed, and they lay on much inside fat. The faces and legs are usually brown. They are naturally fitted for high-lying lands, and will bear confinement in folds.

Under the general term of long-woolled sheep are the Leicester, Cotswold, and Lincoln; under medium-woolled are the Cheviot and Oxford Down; and short woolled embrace the Hampshire, Lincolnshire, South Down, and Merino.

There is no other domestic animal upon which climatic influences are so great. Pure-bred animals, of any of the distinct breeds, when removed to a locality where the soil and climate are quite different, will in the course of two or three generations gradually change their type. The quality of the wool is dependent upon the climate and soil, not less than upon the breed of sheep. Generally speaking, the native sheep of a district have special qualities, the result of climatic influences, which render them, improved by careful selection and breeding, or by crossing with some other strain, more profitable to keep in that district than any other breed.

Irrespective of breed, there is now-a-days, a certain type of sheep that we look for to fill the "general purpose" bill, and the intelligent reader from the following description of a ram will find how near it comes to something between the Leicester and South Down:

With respect to the *Ram.*—His head should be fine and small; his nostrils wide and expanded; his eyes prominent or rather bold and daring; his ears thin; his collar full from his breast and shoulders, but tapering gradually all the way to where the neck and head join, which should be very fine and graceful, and perfectly free from any coarse leather hanging down; the shoulders should be broad and full, and at the same time joining so imperceptibly to the collar forward and the chine backward, as not to leave the least hollow in either place. The muscular development (or mutton as it is called) upon the arm and fore thigh must come quite to the knee; the legs should be upright, with a clear fine bone, and from the knee and hough downwards equally clear from superfluous skin and coarse hairy wool; the breast should be broad, and advanced well forward, separating widely between the fore-limbs; the chest should be full and deep, with no falling in behind the shoulders; the back and loins should be straight, flat and broad; the ribs rising from the spine, with a fine circular arch; the belly should be straight, not bagging; the quarters long and full, well fleshed down to the hough; the houghs should

ABERDEEN-ANGUS POLL COW.—"SYBIL'S DARLING SECOND" (4611).

stand parallel, neither in nor out; the twist or junction of the inside of the thighs, wide and proportionate to the distance of the fore-arms, so that the pillars of support accord in due symmetry with each other, well supporting a rounded and developed volume of carcass. The belt should be moderately thin, and the wool fine, bright, and soft.

Foremost among the long wools stands the Lincoln on account of the great weight, and the lustrous character of its fleece. The native sheep of the district of Lincoln Heath and wold were originally crossed with the Leicester and have been much improved, not only in weight and quality of wool, but weight of carcass, symmetry, aptitude to fatten, and early maturity have also been improved. With this understanding the following is a description of the old stamp of Lincoln:

The head is small, compact, and hornless; the face of moderate length, and, to use a sculptor's phrase, neatly outlined and chiselled; the lips being thin and definite, and the space between the nostrils narrow but sharp. The face should be dashed with brownish grey; the forehead, the ears, and the space between the ears well covered with wool. The eye should be clear and bright, but not prominent. The neck should have a graceful *tournure*, thin at its junction with the head, but enlarging towards the shoulders and chest, The breast should be prominent, wide, and deep. The set-on of the shoulder blades should be oblique, and the ribs should arch boldly, so as to produce a well-barrelled carcass. The loin should be broad and flat, the rump long and broad, the tail set-on high, that is, on a level with the back, the hips wide, and close up to the last rib on each side. The belly should be well supported and straight, and also covered with wool. The limbs should be far apart, muscular, and full; the shanks clean, fine boned, well knit, and covered with short woolly hair of a rusty grey or brown tint. The fleece should be short, close, fine, curled and free from kemps or projecting hairs.

Let us next turn to the Cheviot sheep, now improved by crossing with the Leicesters. The head is bare and clean, the ears are rather long, the chaffron somewhat convex, and the jaws are considerably elongated; the face formerly dusky, as were also the limbs, is now white. The neck is full and round, the chest open, and the general contour of the body round and full. The legs are clean, and clad with wool to the knee joints and hocks. The fleece is of a medium length, close-set and fine, and should be equal in point of quality on every part; it is, however, apt to be curled about the shoulders, and coarser on the hips, tail, and belly, than elsewhere; but in the improved stocks a great difference takes place.

They have no horns, white faces and legs, forward loose shoulders, a heavy head, with a large neck and sinking dewlap; the bones large, and the carcass long and coarse; the back long and hollow, with flat ribs, but good loins and a deep belly; the hindquarter broad and the legs standing wide apart. The pelt was particularly thick, and the fleece consisted of very long combing wool, of a rather coarse quality, weighing generally from 12 to 14 lbs. on the wethers and from 8 to 10 lbs. on the ewes. The flesh was coarse-grained and inferior to the mutton of the New Leicester, and particularly so to that of the small short-wool breeds; but it frequently reached the weight of 35 lbs per quarter; and fat wethers generally averaged 25 lbs.

THE COTSWOLD.—Another variety of long-woolled sheep used to be found on the *Cotswold Hills*. They had lived there from time immemorial, and from the earliest periods of English history had been celebrated for the length and fineness of their fleece, for their hardiness of constitution, for their breeding qualities, and the ewes as being excellent nurses. They, too, have latterly been crossed with the Leicesters, the Lincolns, and others; the value of the cross, however, greatly depends on the situation of the farm, the selection of the individuals, and whether it will be most advantageous for the farmer to cultivate the carcass or the fleece, The cross with a Southdown and Cotswold is now in such high estimation, that there is every chance of its soon being established as a separate breed.

THE LEICESTERS.—There are two types of these: the English Leicester and Border Leicester. The former has been cultivated for more than 100 years, the name of Bakewell being very famous in connection with this breed in the last century. Bakewell did something in the improvement of horses, and not a little among cattle, but his fame will always stand highest on having given England her great mutton producer.

Mr. Bakewell regarded symmetry and aptitude to fatten as first-rate qualities; he found these to be inherent in small, not in large, heavy-boned sheep, which latter consumed an extravagant abundance of food without returning an adequate profit; whereas the smaller sheep he found to increase more rapidly in weight, proportionately, even upon a less consumption of diet. His experience had also taught him another point, viz., that sheep carrying a heavy fleece had always less aptitude to fatten, and were far slower in ripening, than those whose fleece was moderate; and he considered symmetry and early ripening to be of more importance than the loss of a few pounds in the fleece. In short, he considered that the value of the carcass was the first object to be attended to in breeding of

sheep ; and he looked upon the fleece as of secondary importance—not that the loss of two or three pounds in the fleece was not an object, but still he thought that if to preserve this the farmer not only lost ten or twelve pounds of mutton by it, but had to feed his sheep twelve or eighteen months longer than he ought, he would pay dearly for his three pounds of wool extra. Mr. Bakewell was right ; and on these principles he addressed himself to his task.

The improved Leicesters are not adapted for a scanty pasturage, over, which the sheep must travel all day in order to procure a sufficiency of food. They require a good, or at least moderate soil, and on this they fatten with incredible rapidity, and are consequently very profitable to the breeder. If in the establishment of this breed Mr. Bakewell erred, it was in the very little regard he paid to the wool, in which his immediate followers imitated him, some even going so far as to prefer sheep with bad fleeces to those with good, as if a fine and perfect carcass and good wool were incompatible with each other. But this false notion is now corrected, and the fleece obtains its due share of attention.

With respect to the quality of the mutton of the improved Leicesters, we do not estimate it so highly as that of some of the short-woolled breeds. When not over fat, it is tender and juicy, but destitute of high flavour ; but when fattened to a high degree, the interstices of the fibres of the muscles are replete with fat in such a manner that the line of distinction between fat and lean is almost, as it were, lost ; the carcass appears to be a mass of fat, and is anything but attractive. Besides, such meat is not profitable to the purchaser, though it may be to the cook. We admit, however, that it is the grazier's fault if he carries the fattening process beyond the point at which he ought to stop, whether he regards his own profit or the interest of the consumer. It is the character of the breed to ripen early and quickly. As soon as the sheep are in a proper condition for the butcher, the grazier, instead of wasting more food upon them, should get rid of them, and commence the feeding of another lot, to be disposed of in their turn as soon as ready.

It is for the accumulation of outside fat that the Leicesters are chiefly remarkable. They have comparatively little loose inside fat or tallow—a point of some consequence to the butcher, who deems this as adding to his profit. By way of a counterbalance, however, the smallness of the head, the thinness of the pelt, and the general greater weight of the carcass than the appearance of the animal would indicate, should be taken into consideration. Whatever it may be to the butcher, "this diminution of offal is advantageous to the grazier ; for it shows a disposition to form fat out-

wardly, and is uniformly accompanied by a tendency to quickness of improvement." In this latter quality the new Leicesters are unrivalled.

The new Leicesters, with all their good qualities, are not a hardy race, neither are they so prolific as many other breeds. The ewes seldom produce twins, nor indeed did the founders of this stock deem the production of twins desirable. They aimed at bringing forward the lamb as early as possible, and rightly considered that few ewes could produce two such lambs as would meet with their wishes and realize their object. The fact, moreover, is, that the exclusive attention paid to the establishment of a race, the vital energies of which were to be exhibited in the attainment of early maturity and in the quick accumulation of fat, while productive of the results aimed at, necessarily entailed counterbalancing deficiencies. A tendency to rapid fattening and early ripeness is not coexistent, as a general rule, with great fertility. In this point, then, the new Leicesters are defective, but less so than formerly. Still the ewes do not yield any great abundance of milk, and the lambs are tender, delicate, and unfitted to endure any great inclemency of weather.

Such, then, are the new Leicesters, to which so many other breeds owe their improvement by crossing : indeed, if we limit our attention to this part alone of their history, the benefits resulting from them will be found as important as they are extensive. It would be folly to attempt to naturalize the Leicesters on coarse, lean pastures, on wilds, heaths, and mountains, they would rapidly degenerate, and few of their lambs, with the best care, would survive the winter ; but, as in the instances of the Cheviots, the hardy mountain sheep may derive no trifling improvement from a cross, and that too without a loss of hardiness.

The true type of the breed is as follows: The head should be hornless, long, small, tapering towards the muzzle, and projecting horizontally forward. The eyes prominent, but with a quiet expression. The ears thin, rather long, and directed backward. The neck full and broad at its base, where it proceeds from the chest, so that there is, with the slightest possible elevation, one continued horizontal line from the rump to the poll. The breast broad and round, and no uneven or angular formation where the shoulders join either the neck or the back ; particularly no rising of the withers, or hollow behind the situation of the bones. The arm fleshy through its whole extent, and even down to the knee. The bones of the leg small, standing wide apart; no looseness of skin about them, and comparatively bare of wool. The chest and barrel at once deep and round, the ribs forming a considereble arch from the spine so as in some cases, and especially when the animal is in good condition,

to make the apparent width of the chest even greater than the depth. The barrel ribbed well home; no irregularity of line on the back or belly, but on the sides; the carcass very gradually diminishing in width toward the rump. The quarters long and full, and, as with the fore-legs, the muscles extending down to the hock; the thighs also wide and full. The legs of a moderate length; the skin also moderately thin, but soft and elastic, and covered with a good quantity of white wool.

The Border Leicester, not different in blood, but the improved English Leicester changed in size, somewhat in form and other points, as brought about by physical condition and management in the country having the "Borders" between England and Scotland as their home. They are larger than the English type, with a whiter face and smaller head, and an unusually fine bone, as contrasted with the weight of carcass. They are clean in the jaws, with a full eye, thin ears, and placid countenance. Their backs are straight, broad and flat; the ribs arched, the belly carried very light, so that they present nearly as straight a line below as above; the chest wide, the skin very mellow, and covered with a beautiful fleece of long, soft wool.

THE CHEVIOT.—The Cheviot hills, between England and Scotland, have long held a peculiar breed of this name, which can contest in hardiness and mutton quality with the Black Face of Scotland. They are hornless, and faces and legs in general white; formerly the prevailing colour of the face was black, but repeated crossing with the Leicester have made both face and legs white. The best have a fine open countenance, with lively prominent eye; the body is long, the fore quarter wanting in depth at the breast, and breadth both there and on the chine. The legs are fine, clear, and small bone, the pelt thin, with moderate weight of coarse wool fleece; their mutton is excellent.

THE OXFORD DOWN.—The Oxford Downs are a fine breed of sheep, like the Shropshires of comparatively modern introduction. They have been carefully bred as a distinct breed for more than thirty years. They have large, handsome frames, like the Cotswolds, but with a black or grey face, closer wool, and firmer and better quality of mutton. This breed owes its introduction to Mr. Swynham, of Whitchurch, Hants, who about the year 1830 commenced to cross with a Cotswold ram (the old Cotswold as improved by the Leicester) and his Shropshire Down ewes—the object in view being to have an animal which would come to early maturity with large carcass, good fleece, and yet which would possess the hardy characteristics of the Shropshire Downs.

They are of large dimensions, and have a great propensity to fatten, arising chiefly from their wide frame, quietude, and open texture of flesh, which is of quick growth, and consequently expands itself more rapidly than in sheep of other qualities; but they do not possess that exactness of form peculiar to smaller animals, though they have a better carriage. For many years the male animals have been eagerly sought after, with a view to increase the size and frame of other long-wooled breeds. In many respects these sheep approach the Cotswolds, and are said by their admirers to yield finer grained meat.

Among the first introductions of this breed to Canada were those of 1876, by the Ontario Experimental Farm, and now they are spreading rapidly.

Hampshire Down.—These have recently been much improved in frame, quality and early maturing. Their fine, lengthy carcasses, full of lean flesh, are much esteemed in England; the lambs are said to obtain a greater weight than those of any other breed at the same age. The face is dark, about black, wide head and long, Roman nose, considerable bone, and nice short wool. They are esentially a make-up from Southdown and Cotswold—in their hardiness, colour, wool and mutton resembling the one, and in their size the other, having the early maturing of the Leicester through the improved Cotswold, as well as the South Down.

Shropshire Downs, or "Shrops," as their admirers prefer to call them, because they consider they have had nothing to do with Down blood, but this is disputed; they are a comparatively new breed, having many of the characteristics of the South Down, but heavier in carcass and fleece. The frame is long, wide, and deep, with plenty of lean flesh, with a robust constitution and aptitude to fatten. In quality of mutton they are excelled only by the South Downs and some of the mountain breeds. The ewes are excellent mothers and prolific; colour of face and legs, black or grey.

The South Down.—As every prominent long-woolled breed has been improved by the Leicester, so every Down must bow to the South Down for a similar reason. They were materially improved and brought to their present perfection by John Ellman, of Clyde, who says they should have the head small and hornless, the face speckled or grey, the under jaw fine and thin, and the whole space betwen the ears well protected with wool; the eye full and bright; the neck thin towards the head, but enlarging towards the shoulders, and there broad and high; the chest wide, deep, and projecting between the forelegs; the shoulders level with the back, bowing outwards from the top to the breast, leaving room for a

springing rib beneath; the rib coming out horizontally from the spine, and the last rib projecting more than the rest; the back flat from the shoulders to the tail; the loin broad and flat; the hips wide; the belly as straight as the back; the legs neither too long nor too short, fine without weakness, and of a speckled or dark colour; the belly well protected with wool, the wool coming down before and behind to the knee, and short, close, curled, fine, and free from spiry projecting fibres; the flesh fine-grained, and of excellent flavour.

A good South Down carries more meat in proportion to the offal than does any of the other short-woolled varieties. They are very hardy, grand foragers, and comparatively free from diseases in consequence very much of the character of the chalk soils of the Down hills. In size and weight of wool they are inferior to the other Downs, but are early maturers, good nurses and prolific.

THE MERINO.—We have these from Spain and France, the French being considerably the larger. They are spiral horned, white face and legs, fine bone and a fine clear pelt. The wool is exceedingly fine and weighs heavy; the best fleeces have a dark brown tinge on the surface, almost amounting to black, which is formed by dust adhering to the greasy, yolky projection of the pile, a marked contrast to the rich white colour underneath, which, with the rosy hue of the skin, denotes high proof.

This breed is highly valued in the United States and Australia, but as yet has no place in Canada or even in Britain. So much have the Americans done that these may be fairly said to be an American Merino. They are not mutton sheep, although their cross, well done to, has made both weight and quality at the Ontario Experimental Farm. The length and thickness of wool, evenness and firmness of staple, that looseness of skin and wool everywhere go to make an American Merino.

BREEDS OF HORSES FOR THE FARM.

No horses were found either in America or Australia when those continents were first discovered. Now, on the almost boundless prairies of South America, immense herds, numbering many thousands, are to be met with. These mustangs, or wild horses, are the descendants of a race of Spanish horses, who escaped from domestication. On becoming emancipated they bred and congregated in herds. The horse is now to be met with in every habitable country, except Lapland and Greenland, in the region of eternal snow.

The horses of Europe, like the inhabitants, are of mixed lineage. The Russian horse is of a small stature, hardy and muscular, capable of great endurance, inured by exposure to the hardship of a rigorous climate and the privations of an innutritious and scanty fare. The Italian horses of the present day are widely diversified in character; many are powerful and well shaped, whilst others are of a light and weedy character. During the middle ages large numbers were imported into England for military purposes, and no doubt became mixed with the native races. The Spanish horse is small and has a strong dash of African blood. For many years large numbers of Norman-French horses have been imported into England.

The first stud-book published in England bears date the 25th day of March, 1808, the second volume of which did not appear till 1822. During the fourteen years which elapsed between the appearance of the first and second volumes, the "horses" of 1808 had become "racehorses" in 1822. From this slender beginning all the stud and herd books now extant trace their origin. From the date of the Roman invasion the native race of English horses became much mixed in blood from a small Eastern breed supplied to them principally through the medium of Jewish dealers. The Anglo-Saxon warriors preferred the powerful black race of Germany as representative of the Flemish breed. The Normans, who were skilled horsemen, imported the best animals their country could produce for the use of their soldiers. And as all horses used for war purposes during the middle ages were entire, they rapidly influenced the native breed of the country.

Although the indigenous breed of middle England differed somewhat in size from those of the lowlands of Scotland, yet the improvement of both was derived from a common ancestry. Both the improved Clydesdale and the modern Shire horses were built up through the infusion of Flemish blood. During the latter part of the thirteenth and early part of the fourteenth centuries a considerable trade was carried on between Scotland and the low countries, and in those days of barter it is only fair to suppose that the Scottish merchants would sometimes accept horses in exchange for goods.

It is generally considered that the later improvement of draught horses in England was principally effected through the importation of a race of black horses from Holland and Belgium.

The improvement of the horse in this country is now a matter of record and history. It has silently, and with no little rapidity been going forward for more than a century, till we have attained a race of animals which probably equal those of any other country for adaptedness to

draught, the road, and the saddle. This improvement has been mainly brought about by the importation of some of the *best and stoutest of the English blood.* In breeding from these for purposes of utility, particular reference has been paid to strength, endurance and speed. The world has not seen their equal. No horses surpass our best four mile pacers; none equal our trotters. It would be a superfluous task to attempt enumerating all the imported horses that have contributed to this improvement. Each good animal has done something.

Besides our unsurpassed blood horses we have others derived from various sources, and especially from the different English breeds, all of which are variously compounded, with the first and with each other. On our north-eastern frontier the *Canadian* prevails, a bastard but not degenerate race, made up of the French, Norman, and the English or American. At the extreme south and west, we have the *horse of Spanish origin,* obtained in his domestic state in Florida and Louisiana; and from another branch of the Spanish are descended the wild horses of Mexico and the more northern prairies. These are diversified in character, and generally possess medium size and merit. The *Conestoga,* a heavy roadster and draught horse of fine symmetry and great power, is principally reared in Pennsylvania, and is used for the team and truck. He is an amalgamation of several breeds but probably owes a share of his character to the Flemish horse, for which there was a decided partiality among the numerous German emigrants of that State. Several varieties of *ponies* are to be found in different sections but principally among the French, the half-breed, and the Indians upon the frontiers, who have bred a stunted race from the Canadian or wild horse and such others as could survive the hard usage and scanty winter food afforded by nature and their rude husbandry. Many of these have considerable beauty and symmetry, and are fleet, hardy, and spirited.

The Suffolk Punch is distinguished by the colour, which is chestnut, often merging into a dark sorrel, the mane and tail being frequently of a light or silvery shade. They seldom exceed sixteen hands in height. The breed has been vastly improved within the last twenty years. They are compact and well shaped, legs tolerably free from hair, but rather inclined to be round in the bone. They are active and well adapted for ploughing and other farm work. Many find their way to London, where they are used in brewers' drays and other heavy work. They are generally reputed as being trustworthy at a steady pull, at which they will again and again renew their exertions. They are reputed to be of Norman-French origin, and are said to have been at first introduced into the East-

ern Counties by Norman invaders. Crossing with other varieties has been tried, but the result has generally been disappointing. The pure breed, except on the home farms of noblemen and large landed proprietors has not, however, made much progress beyond its native district. Within the last few years there has been a growing demand for good specimens for importation. These have frequently realized high prices. The establishment of a *stud-book*, and the fostering care of a vigilant executive, will tend to improve and enhance the value of the breed.

The Cleveland Bay may be considered more of a carriage than an agricultural horse. The breed takes its name from the rich valley of Cleveland on the river Tees, in the North Riding of the county of York. The prevailing and most fashionable colour is bay, with black legs. Many are sixteen hands and upwards. They are particularly active, hardy, and of great endurance. For general tillage purposes, on light soils they cannot be surpassed. It is generally supposed the breed was established by mating the blood horse with the native mares of the district. By still crossing the Cleveland mares with the thoroughbred, most of the fine carriage horses in the country are produced. Those with more bone and strength, though somewhat deficient in style and action, are in great demand in London and the large provincial towns for spring-carts and light vans, used in the speedy despatch of merchandise. The thoroughbred stallion and the Cleveland mare form a good alliance, and many valuable weight-carrying hunters are now thus bred in these days. But a weight-carrier is of little use unless he can go at a racing pace for a burst of twenty minutes, and successive crosses of pure blood are needed to increase the powers of speed and endurance. When carried too far, substance and strength are at length sacrificed.

The Clydesdale.—This breed derives its name from a district of considerable extent, through which the river Clyde winds its course. Taking Glasgow as a centre, the country for miles in every direction, is teeming with an industrial population. The haughs of Clyde are celebrated far and wide for the superior excellence of their pastures; and here the breed has long been located, and then fostered and improved through the energy and intelligence of those interested and engaged in the business of agriculture. No district can vie with that of Clydesdale in the care bestowed on the breeding, rearing, and management of the horse, and the labour has not proved unfruitful to those interested in the noble animal. A visit to the Glasgow Stallion Show will well repay the student. The prevailing colours of the breed are black, brown, and bay. A grey sometimes makes its appearance; but a stallion of that colour, however perfect

in form, would scarcely be used for stud purposes. The average stature is about 16 hands; they are rather long in the body. In the best specimens the head is lean, eyes full and prominent, neck well arched, and of moderate length; shoulders oblique, chest wide, legs placed well outside the body, flat and muscular, with abundance of straight, soft, silky feathering; ribs deep and well sprung, hocks clean and strong. One of the chief essentials in a draught horse is freedom of action. In this respect the Clydesdales are superior to most other breeds; they step out freely with the long, slinging gait peculiar to the race. They are high mettled; and, except from the results of neglect and unkind treatment, are usually free from vice. When used in one-horse carts, as they generally are throughout Scotland, no other breed of horses can accomplish an equal amount of work in a given time. The breed is held in high estimation, and commands high prices. Through the united exertions of a number of patriotic noblemen and gentlemen interested in the breed, a society has been formed for the purpose of protecting the interests of breeders and purchasers, by means of a *Stud Book*, in which all animals of authentic pedigree can be registered at a small cost. This will no doubt greatly enhance their value, and enable the intelligent breeder to pursue his vocation with greater certainty of success.

The Shire Horse.—Ancient tradition accords to the rich fen land districts of Lincoln, Huntingdon, and Cambridge a distinct race of black horses, of tall stature and massive form. Animals of similar characteristic type, though varying in size (the probable result of a change of soil and climate), were spread over the counties of Northampton, Warwick, Stafford, Leicester, Derby, and Nottingham. Early historical records furnish descriptive particulars of a similar breed inhabiting Germany, Holland and Belgium. They were well known and extensively used by the Romans for military purposes; during the Roman invasion and occupation, no doubt, large numbers were brought over to England, and became mixed with the native races. The breed appears to have thriven best in a country of rank pasture and soft marshy soil.

The old English black horse was a heavy, coarse animal, with wide loin, powerful quarters, and immense bone, generally inclined to be round, with flowing mane and tail, the legs clothed with a profusion of coarse hair. Their colour was generally of a sooty black, with almost invariably white markings on the legs and a small white star on the forehead. They were of a sluggish temperament. Their short, steep pasterns and upright shoulders were fatal to that freedom of action so desirable a quality in modern draught horses. Tradition says an Earl of Huntingdon imported

several stallions from Holland for the use of his numerous tenantry on Trent-side. Down to the present day a similar race is still in existence in Holland, whence most of the horses used in mourning coaches are chiefly drawn,

The old English cart-horse, with all its defects, has been the basis of the most valuable breed of draught animals in England. From him has descended the Shire horse, good specimens of which are in great demand for waggon and dray purposes.

In the improved Shire horse the head is generally long and lean, the profile slightly arched, broad between the eyes, eyes large and prominent, ears large, not set too forward; nostrils wide and clear; neck long, deep, and arched; shoulders oblique, sprung well into the back, deep from withers to shoulder point, and placed well outside the trunk—this ensures a wide chest, a most desirable and important point—ribs deep and well sprung, with small space between last rib and the hip; round in the barrel and deep in the girth; back short, loins broad and muscular, long from hip to hough; tail well set, buttocks full, dropping well down to hock. The feet should be rather large, the heels well expanded, the horny substance firm, slightly sloping and free from sand cracks, side or ring bones; legs short from knee to pastern, bone large and flat, well clothed with long silky feather, with tassel of hair at lip, knee, and hough; pastern joints long and sloping. The carriage should be good, and the action long and slinging. Walking is the principal pace of a draught horse; unless he can do this well he is of little use. Pace to some extent may be improved, but without good shoulders no animal can walk well.

The Percheron Horse.—Few breeds of late have attracted so much attention in the United States and Canada as this. They are peculiar to Perche, a district in France. Various theories as to his origin and development have been advanced, by interested partizans at times, and again by pure lovers of horses who pursued truth for truth's sake alone.

One writer insists that he is descended from what some call the primitive or natural horse, the pure blood Arabian, crossed with a stock of heavy draft horses existing in that section, but without historic mention, prior to the Crusades. He thinks that after the defeat of the Saracen chief, Abderame, by Charles Martel, in Vouille, in which battle a host of Saracens perished, the cavalry of the enemy, Oriental horses of marked character, true Arabs, fell into the hands of the French,—thence many of these horses were brought by their victorious masters to the districts of Normandy and La Perche. Here commixture of blood with a heavier

horse of excellent quality followed, and the cross resulted in producing the now celebrated Percheron.

The native race referred to is thought by some to have been the old war horse of the Normans—heavy, bony and slow—good for cavalry use during the days of chivalry, when the carrying of a knight and his armour required an animal of great strength and powers of endurance.

Others think that it was a stock of horses then peculiar to Brittany and used for draft rather than for war.

The old Norman has been described as being capable of carrying great burdens at a reasonable rate of speed; to have been large, compact, muscular, and possessing the greatest endurance.

The points of the Percheron may be stated as follows:

The head is short; the brow is broad, and has that hollow of profile between the eyes and nostrils sometimes known as the dish-face; but the head in general is not heavier than seems in keeping with the general massiveness of the frame; the neck is long, well-arched and heavy, but, like the head, not disproportioned to the general bulk. The back is short; they are well ribbed up and round barrelled; their legs are particularly short from the knees and hocks downward; they are heavily haired, but have not such shaggy fetlocks and feet as this would seem to indicate; their sinews are iron-like; and their feet are hard, sound, apparently insensible to disease. In height, they are from fourteen and a half to fifteen and a half hands, the latter being rather more than the average. Gray is the characteristic, almost the only, colour.

For hard work on ordinary fare the Percheron is unequalled; and his energy and endurance are wonderful. He will keep his condition where another horse would die of hard labour and neglect. Though full of spirit, unflinching under even painful effort, he is yet docile.

The Canadian Horse.—This horse, when pure, is entitled to be considered distinct. He can lay no claim, of course, to being regarded as the natural horse, no more than the Norman, Percheron or the English thorough-bred; but his characteristics are so marked as to render him worthy of being classed separately and noticed with some minuteness.

He is supposed to be descended from the Norman-French horse, brought over by the pioneers of Canada; but how crossed (though he is evidently the result of a cross), it is impossible to say. In some particulars, he so much resembles the old horse of Normandy as to seem the unmistakable descendant of that stock; whereas in others he is so unlike him as to indicate that the cross must have been with a very strongly marked animal, of great powers of transmission.

The distinguishing characteristics may be stated as follows : The average height is about fourteen hands ; the body is solid, compactly put together, but somewhat inclined to flatness of side ; the head is rather large for a horse of the height stated, but it is well formed and lean, so that it does not appear out of proportion and cumbersome; the forehead is broad: the ears are wide apart, and carried well up ; the eye is small and clear, and has a bold expression ; the chest is broad and full ; the shoulder is strong, but inclining to be straight and rather low and heavy at the withers ; the loins are fine ; the croup round and fleshy ; the thighs muscular ; the legs comparatively heavy and joints pretty large, but the bones are flat, and no race of horses has sounder and more powerful limbs ; and none can equal the Canadian as to feet—these being tough, hard, iron-like, and free from disease, even under the most unfavourable circumstances. This seems to be one of the most valuable characteristics of body. Bad handling, awkward shoeing, hard travel—nothing in the bounds of reason seems to affect his feet. Diseases of this part are almost absolutely unknown.

The mane and tail are peculiar, being very heavy, and in almost all cases, wavy. The back sinews are shaggy-coated, nearly to the knee, and the fetlocks are long.

The prevailing colour is black ; but browns and chestnuts are frequently found ; sometimes sorrels and duns, having manes and tails lighter than the body. Occasionally there may be found a dark iron-gray, with black legs.

Canadians are long-lived, easily-kept, and capable of the greatest endurance. They are heavy enough for the purposes of the farmer ; and as roadsters, while they are not to be regarded as rapid travellers, they maintain a reasonable rate of speed, say six miles an hour, for long journeys and continuously, and this while carrying a heavy weight ; it is nothing uncommon for them to do fifty miles a day for many days in succession.

BREEDS OF POULTRY.

Within the last few years the number of so-called distinct varieties of fowls has been largely increased. Whether the breeds are originally distinct may be doubted. Not above five or six can be relied on to breed all their chickens like themselves. For practical purposes fowls may be treated as if there were but few kinds, for almost all require the same treatment. It may be convenient to group all the kinds at present cultivated under two headings.

The two groups must be described as, first, of fowls which immediately "set" or incubate after having laid a certain number of eggs ; and second of those which will generally continue laying, throughout the late spring and early summer months, without even wishing to set ; *i. e.* we may call them "setters," and "non-setters." Among the first—the group of setters—these further distinctions must be taken. They are either clean-legged or feather-legged fowls. Of the former (the clean-legged) the best known varieties are the Dorking or Sussex fowl, under which title must be included all the five-toed fowls of all colours, and also the cuckoo, the Scotch-grey, and the ordinary barndoor fowl. These are among the best for providing chickens for market. The game-breeds (with which must be reckoned the Malay) are steady setters, and the best of mothers. All the feather-legged fowls set. In this group are included the different shades of colour assigned to what are known as Cochin Chinas, with the grey birds called Brahmas, and the black called Langshans. The special merit of these feather-legged breeds is their tameness and their habit of winter laying : in order to which the earliest pullets of the spring must be retained—which will begin laying as early as the end of October. They also—better than any others—endure confinement within narrow limits. Then turning to those varieties which do not set on their eggs, the second group must be divided into single and rose-combed varieties. Of the former, the best known kinds are the black Spanish, blue Andalusian, black Minorca, and brown and white Leghorn. Under this head, also, come the crested varieties (under which must be included the Polish, the Houdan, and other French kinds). In this second group must be considered the whole of the varieties,—whether pencilled or spangled,—which are called Hamburgs, Chittaprats, or Dutch every day layers. Both single and rose-combed breeds furnish a large supply of eggs in summer ; but the rose-combed are very impatient of confinement. The crested fowls are placed in this group because, though they occasionally become "broody" or desirous of setting, yet they are not often to be trusted either to hatch eggs or to rear chickens which have been hatched in other ways.

Now as regards their treatment it matters little to which of these varieties the fowls we propose to keep may belong ; for all alike need a certain degree of freedom, and a free exposure to sun, to be at all productive, especially in winter. Only people of experience can keep fowls healthy in confinement. The most experienced can hardly keep them confined long. Young fowls, *i. e.* the early pullets of the year, lay the largest quantity of winter eggs ; but no fowls, young or old, can be expected to reach the standard of high health, at which laying begins, unless they be well fed

with a large variety of food. It is comparatively easy to fatten a fowl in a few weeks; but to preserve one in constant high condition, so as to enable it to lay regularly, good meals, from the owner's hands, are requisite; with tit-bits picked up for itself upon the yard or road-side hedges. It is a mistake to suppose that the hens do best which have a neat garden or trim compartment to run on. Fowls and untidiness go well together. An open common or highway where cattle have been—which, with their droppings, attract flies—is better range for fowls than is the neatest flower bed; whilst rough shrubs to give shade, or shelter insects, are very desirable. Given these—*i. e.*, a rough place to run about in—then the task of the poultry keeper will be comparatively easy; for his main duties will be discharged by the birds themselves.

The Food and Fattening of Live Stock.

THE rearing and fattening of stock are the highest developments of agriculture. The conversion of the mineral matter of the soil and the treasures of the air into saleable crops is the first step. The conversion of vegetable matter into flesh is the final process, after which flesh is returned again to the domain of earth and air.

The average percentage composition of the foods commonly given to farm animals is shown in the following table. The figures given are in every case the mean of a large number of analyses.

PERCENTAGE COMPOSITION OF ORDINARY FOODS.

Food.	Water.	Albuminoids.	Fat.	Soluble carbo-hydrates.	Fibre.	Ash.
Cotton cake (decorticated)	10·0	41·2	14·0	18·0	9·0	7 8
Cotton cake (undecorticated)	11·5	24·6	6·2	30·2	20·8	6·7
Linseed cake	12·0	28·1	12·0	30·3	11·0	6·6
Beans	14·5	25·5	1·6	45·9	9·4	3·1
Peas	14·3	22·4	2·0	52·5	6·4	2·4
Oats	13·0	12·9	6·0	53·8	10·8	3·5
Wheat	14·4	11·3	1·5	68·1	3·0	1·7
Barley	14·0	10·6	2·0	63·7	7·1	2·6
Maize	11·4	10·4	5·1	68·5	3·0	1·6
Malt dust	9·5	23·7	2·2	44·9	12·5	6·8
Wheat bran	14·0	14·2	4·2	50 4	11·1	6·1
Brewer's grains	77·4	4·8	1·4	9·7	5·3	1·5
Clover hay	16·0	12·3	2·2	38·2	26·0	5·3
Meadow hay	14·3	9·7	2·5	41·0	26·3	6·2
Wheat straw	14·3	3·0	1·5	32·6	44·0	4·6
Meadow grass	80·0	3·5	0·8	19·2	4·5	2·0
Green clover	83·0	3·3	0·7	7·0	4·5	1·5
Potatoes	75·0	2·1	0·3	20·5	1·1	1·0
Mangels	88·5	1·2	0·1	8·2	1·0	1·0
Swede turnips	89·3	1·5	0·2	7·3	1·1	0·6

The composition of all vegetable foods is liable to variation, depending on the state of maturity of the plant, and the character of the soil and season. In the case of perfectly matured produce, as, for instance, ripe seed, the variations in composition are not generally considerable, and an average composition, such as is given in the table, will be found in most cases pretty correct. But in the case of immature produce, such as meadow grass, turnips, or mangels, the composition largely depends on the stage of growth in which the plant is taken, and is also greatly affected by the character of the manuring. It may be generally stated that as a plant matures the proportion of water, nitrogenous matter, and ash constituents diminishes, while the proportion of carbo-hydrates largely increases. At the same time the amides become more or less converted into albuminoids.

While fodder crops deteriorate towards maturity, from the conversion of soluble carbo-hydrates into fibre, crops such as potatoes and mangel improve, the carbo-hydrates produced in their case being respectively starch and sugar, both of them substances of great feeding value.

The influence of high manuring is naturally to increase the luxuriance of a crop; a luxuriant crop will always contain more water than one in less active growth. Very large mangels often contain only 6 per cent. of dry matter, while in quite small roots the proportion may be as high as 15 per cent. Luxuriance also retards maturity. A heavily manured mangel will contain, at the same date, a much smaller proportion of sugar than a similar mangel grown on poor soil. The result of high manuring is thus not only to increase the bulk of the crop, but also generally to diminish the proportion of carbo-hydrates, and increase the nitrogen, ash constituents, and water. In highly manured crops a smaller proportion of the nitrogen will exist as albuminoids than in crops less heavily manured and more mature.

An important element in the character of a food is the proportion between its nitrogenous and non-nitrogenous constituents, these two classes of ingredients performing to a considerable extent distinct functions in the body. To find this proportion it is usual to calculate the fat into its equivalent in starch (generally done by multiplying the fat by 244), and add the product to the other carbo-hydrates of the food; the relation of the albuminoids to the total non-nitrogenous constituents reckoned as carbo-hydrates is then easily found. The relation in question is commonly known as the "nutritive relation" of the food (Nährstoffverhältniss), but is better described as the "albuminoid ratio." Thus the composition of wheat grain in the table shows an "albuminoid ratio" of 1:66, and the composition of decorticated cotton cake an albuminoid ratio of 1:15. Figures so calculated are, however, only approximate, as we ought clearly only to take account of the constituent actually digested by the animal. A little consideration will show that it is impossible to affix a definite feeding value to any food, as its practical effect must depend in great measure on the conditions under which it is employed; more especially on the kind of animal consuming it, and the general character of the diet of which it forms a part. Thus, the value of a bulky food, as hay or straw, is far greater when given to a ruminant animal, than when consumed by a horse or pig. Concentrated, easily digestible foods, as corn and oilcake, have clearly a value above their composition when added to a poor and bulky food, as straw chaff, or to a watery food like turnips, because they are the means of raising the diet to a point at which the animal will thrive. On the other hand, roots and green fodder, even when watery and poor in composition, may have a considerable effect when added in moderate proportion to dry food. The highest value is, in short, only obtained from food when it is skilfully employed.

There is, also, a condition which we can never hope to express by figures, but which has a considerable influence on the effect of any diet; this is flavour. An agreeable flavour stimulates appetite, and probably promotes digestion. This part of the question belongs, rather to practice than science.

Our knowledge of the precise functions performed by the constituents of food must still be regarded as unsettled. The terms *fat formers, heat producers,* and *force producers* were, until very recently, indiscriminately applied to the carbo-hydrates, starch, sugar, and fat. Recently the views of many leading physiologists have been altered, and, while fats and oils are still regarded as producers of fat, starch and sugar are looked upon more exclusively as maintainers of the animal heat and producers of vital force. This view, it will be observed, does not detract from the nutrient value of these substances, because animal heat and force would, but for their presence, require to be supplied from the fats and albuminoids of the food. The albuminoids have also recently been regarded as probable sources of fat. They, like the carbo-hydrates, contain the elements of fat in the form of carbon, hydrogen, and oxygen, and, by their decomposition in the animal system, they may become sources of fat, as well as of highly nitrogenised products available for other purposes.

The character of the fattening process has been more thoroughly studied than the nutrition of young and growing animals.

For the body to increase in weight it is clear that the food supplied must be in excess of the quantity demanded for mere renovation of tissue and for the production of heat and work. When such an excess of food is given, a part of the albuminoids and ash constituents is generally converted into new tissue, while a part of the fat, carbo-hydrates, and albuminoids is stored up in the form of fat.

As only the excess of the food is converted into increase, liberal feeding is, within certain limits, the most economical. If a lamb can be brought by liberal treatment to 150 lb. live weight at one year old, the amount of food consumed will be far smaller than if two years are occupied in attaining the same weight, for the food required for animal heat and work during the second year is clearly saved.

The three animals with which the farmer is chiefly concerned have very different powers of consuming food, and yield different rates of increase, Lawes and Gilbert reckon that, on an average of the whole fattening period, an ox will produce 100 lbs. of live weight from the consumption of 250 lbs. oil cake, 600 lbs. clover hay, and 3500 lbs. swedes. Sheep will produce the same increase by the consumption of 250 lbs. oil-

cake, 300 lbs. clover hay, and 400 lbs. swedes. Pigs will require about 500 lbs. of barley meal to yield a similar result.

If we draw our conclusions from the composition of diets of acknowledged good quality, and regard solely the true albuminoids present we shall find that a diet having an albuminoid ratio of 1:9—10 is very suitable for fattening oxen; a diet of 1:8—9 will give good results with sheep, and one of 1:7 with pigs. Diets more nitrogenous may, however, be employed with more or less advantage.

SOME FACTS TO GUIDE THE GROWER OF BEEF.

Any branch of science that is intimately related to the more prominent necessaries of human life must be the most interesting of all sciences. The beauties of study in Astronomy and Geology cannot, for example, compare in intrinsic value with Animal Physiology and Chemistry as taught through the upbuilding of a fattening steer and of a bushel of wheat; yet the discoverer of a planet or of a new compound secures the world's applause as against the producer of improved food for man. That this will always be so is not evident, because, I think, as the world becomes more practical, it will also become more honest in distribution of favours that bear upon the every-day comforts of its people. Excuse the temptation thus given to record in our history, as Experimentalists, how much we rejoice with Europe in the high honour just accorded to the late J. B. Lawes—now Sir J. B. Lawes, Bart, of Rothamstead, England—England's first man in the science and practice of what has largely made her a nation—Agriculture.

It is already a certain thing that the leaders of all classes are becoming more practical in regard to the life of the millions of every country; in fact, land and its productions are not only the absorbing questions, but are at the root of a revolution that will ring the earth in another ten years. In calling the attention of Ontario farmers to this phase of rural economy, I do so with the view of obtaining for that branch of it called "Live Stock" such a measure of scientific recognition as its importance justifies. I do not complain that science has taken no notice of beef, mutton and wool, in other countries, but I do complain that the great national bodies of scientific men on this continent have not formally admitted farmers as co-partners in their annual deliberations. I shall apologize if I am in the wrong in this, as I may have overlooked some recent work; but I cannot withhold complaint, if, on the other hand, no place, for example, has been, or will be, allowed the scientific and practical agricul-

turist, nor any encouragement given, is to be given to him in the prosecution of his studies, at the forthcoming meeting of the American Association for the advancement of science, at Montreal.

The enterprising farmer of these days is not satisfied with a knowledge of the principles of the sciences that are intimately related to his profession, the principal application of some of which he can even venture upon himself—but he requires that the pure scientist guide him through all the daily and yearly history of every field and animal of his farm, in order to the greatest amount of the most valuable produce, in the shortest time, at the least cost.

The Purpose of Cattle Fattening.

1. Is to obtain the largest quantity of the best quality of beef, at the least cost, under three years of age.
2. To aim at breeding, raising, and fattening one cattle beast from every ten cultivated acres of the Province.
3. To grow all the food required for these purposes within ourselves.
4. The animals to weigh alive not less than 1,500 pounds each.
5. The net cost of production, giving credit for manure, not to exceed five cents per pound, live weight.
6. To obtain one ton of manure per month, from each cattle beast over two years old, when stabled to finish the fattening process.
7. The value of such manure, under the best management, to be made worth $2.50 per ton.

The Animal in Cattle Fattening.

In any class it is desirable to have,—

8. Purity of sire ;
9. A certain age and sex ;
10. A quiet disposition ;
11. Quality, as indicated by fine head and ears, fine bone, horn, tail, and a medium thick skin, having plenty of fine, soft silky hair, with mellowness ;
12. A weight-carrying frame ;
13. Such a breed as will mature, or premature, from two to three years of age ;
14. Having the character of doing best upon Ontario pastures ;
15. Giving the best quality of flesh, with least offal ;
16. Sure breeders and good nurses ;

17. The Shorthorn grade is best for weight, early maturity and stall feeding.

18. The Hereford Grade is best for hardiness, and grazing disposition ;

19. The Aberdeen Poll Grade is best for an even average of all requirements ;

20. The Galloway Grade is best for extreme hardiness and quality of flesh ;

21. The Devon Grade is best for good nursing and sure breeding.

The Food of Fattening Cattle.

Its use is to,—

22. Keep up animal heat or life ;

23. Repair the waste ;

24. Increase growth ;

25. Produce flesh and fat.

Its value is affected by,—

26. The particular breed ;

27. Age of the animal ;

28. Individual character ;

29. Conditions of life—such as temperature ;

30. Management.

31. In growing our own cattle food, the first question should be :—How much beef can we get per acre ? the second, How much manure are we able to return ?

32. The amount of increase that may be calculated upon as the produce of certain quantities and kinds of food, depends upon paragraphs 8 to 30.

33. Chemically, we can calculate upon getting one pound of flesh from any food that has *ten parts of dry substances* in its composition :—thus, 100 pounds of swede turnips, having as much as ninety parts of water, will only give one pound of flesh, while 100 pounds of corn, having only thirteen parts of water, will give ten pounds of flesh.

34. Practically, foods give results according to their chemical analysis, when combined, or mixed, to suit the particular animal system.

35. For example, a mixture of corn, pease and oats, will give better results than corn alone, although seven per cent. lower in nutritive properties.

36. Never forget the difference between "life" food and "fattening" food ; starch and sugar keep up heat and life, and unless they are supplied,

along with fats and oils, the fattening process will be slower, because heat and life would have to be supplied from the fats and oils; if given in excess, starch and sugar will produce fat on animals.

37. A young animal, building its bone and muscle, requires different kinds and quantities of food from the more mature one. Hay, straw, and other fodders are best for the immature animal; they are also heat and fat makers, and would fatten alone, though slowly.

38. Rapid growth and much fat are opposed to each other; so, to grow carcass and also fatten early, requires bone-forming and fat-forming materials—they must go together.

39. A maturing animal—cattle two to three years old—having built the most of its frame, requires less fodders, and more flesh and fat formers. Grain in many forms is therefore best for finishing fattening cattle.

40. From birth to the time a cattle beast is ripe, the daily rate of increase on an average should not be less than one and one-half pound,—thus, a three-year-old should weigh 1,600 pounds; a two and one-half-year-old, 1,360; and a two year-old, 1,100 pounds, alive.

41. But, in fact, the daily rate of increase is more up to two years, than at any time afterwards. A two-year-old, well done to, will weigh 1,400, and if carried on to three years will not scale less than 1,800 pounds. This may be called *pre-maturing*.

42. Very much then of the success of obtaining big weights in a short time, lies in a knowledge of individual character, and the proper proportions and kinds of food.

43. The best kind of permanent pasture—a mixture of certain grasses and clovers—under favourable conditions, will give a greater daily increase than any other form of food.

44. A two-year-old cattle beast, put to such pasture on 15th May, when it weighs 1,100 pounds, will stand 1,400 on 1st October following. The addition of grain under such circumstances does not add correspondingly to weight, though it does so on comparatively poor pasture.

45. Proper shelter and water on pasture means forty per cent. of the increase.

46. Where no first-class permanent pasture is kept, it is desirable to provide for short commons by having a regular supply of green fodders; feed these either upon the fields or by "soiling."

47. Soiling fattening cattle in Ontario implies the production of one animal per acre, in place of three acres of ordinary pasture maintaining one; the principal soiling crops are corn, lucerne, red clover, tares and oats, rye and rape.

48. When it is desired to prepare for exhibitions, or for extra condition at Christmas, soiling, in a loose box all summer, in addition to grain, cannot be surpassed by any other form of feeding.

49. Straw cut and slightly fermented is one-fourth more valuable for fattening.

50. Green oat-straw and pea-straw together are about equal in value to hay.

51. Thirty-five pounds swede turnips, six pounds clover hay, and two and one-half pounds oil-cake will produce one pound of beef.

52. One ton of fermented cut straw and two hundred pounds oil-cake is equal to one ton of hay.

53. Six pounds hay, one pound bran, twenty pounds turnips, and five pounds corn-meal will add one pound to the weight of a good two-year-old steer.

54. Six pounds hay, one pound bran, twenty pounds turnips, and six pounds pea-meal will do the same thing.

55. The like quantities of hay, bran, turnips, and seven and a half pounds crushed oats will do the same thing.

56. Corn, pease, oats and barley will pay to fatten cattle when not over one cent per pound in the market.

57. Barley-meal gives a fine finish, and sleek, mellow handling.

58. In soiling, green fodder is safer when cut and mixed with straw or hay, allowed to slightly ferment and sprinkled with meal.

59. It is still an unsettled question whether cooked food or raw food is best for cattle-fattening.

60. All animals fatten cheaper and faster on prepared raw food, as against whole or uncut hay and roots.

61. Every animal that chews the cud must have *bulk*; it is not enough to have sufficient nutritive value in small quantities,—the stomach must be filled to give material for ruminating.

62. Most foods are better in combination than alone.

63. Combine so as to have little or no waste.

64. Fat-producing and flesh-producing food *together* will give sixty per cent. more increase than when given singly.

65. For young cattle give 1 of flesh to 8 of heat-producing substances, and to older ones give 1 to six.

66. Most food of young cattle goes to make up bone and muscle, leaving third-class manure.

67. Most food of half-grown animals goes to make flesh, leaving second-class manure.

68. Most food of mature animals goes to make fat and support life, the excess becoming first-class manure.

69. Exclusive of water chemically, animals coming to maturity will eat about one-fiftieth of their own weight per day.

Miscellaneous Agricultural Subjects.

THE ONTARIO FARMERS' TEXT BOOK.

1. Be your own nurseryman, by setting aside part of the garden to be laid with young trees from your own bush or that of your neighbour.

2. There are as many suitable plants in the uncultivated clearances of the country as would replant every cultivated acre of the old Provinces.

3. Do not grudge a piece of cultivated land for tree planting—the gain will be more than a grain crop, and in any case you can seed down to hay and permanent pasture.

4. The objects of planting, or replanting, are :

1. Immediate shelter.
2. Ornament.
3. To assist in regulating rainfall and general temperature.
4. As a profitable crop,

5. The best shelter is from fully developed trees standing at proper distances apart—not from a close body of branchless stems.

6. Ornament is secured only by allowing every tree room to grow in accordance with its individual character—never by crowding.

7. To assist in regulating rain-fall and temperature suitable to the wants of the country, we must have a national policy based upon scientific and practical facts in past arboricultural history.

8. Never plant trees upon naturally wet ground (our heaviest swamp sorts—so called—are upon comparatively dry spots).

9. Our native trees require no manuring, trenching, or breaking up of the surface, in preparation for replanting.

10. Spring planting is generally more successful than in the fall.

11. Choose mild, calm weather, between 1st April and 1st June.

12. Select plants from the clearings or unshaded openings in the bush, never from under older ones, and as much as possible from soil and exposure of a similar character to that to which they are to be removed.

13. Hardwood trees are safer to transplant than the pine and spruce.

14. The best sorts are maple, birch, beech, ironwood, ash, elm, butternut, oak, and hickory, with pine, spruce, and hemlock to intermix.

15. To save time and insure better success, remove the plants from the bush, or the public nursery, in October, and trench them close together, but separately, in dry soil, covering them firmly with earth.

16. Before trenching, cut off any over-lengthy rough root, and branch, but take care of the small fibres and the top leader.

17. Avoid tall branchless trees that have been growing close together—a two or three feet one will do better than one ten or twelve feet in length.

18. In removing from the bush, dig all round before lifting; do not pull much nor shake off all the earth.

19. Never forget that drought is more dangerous than a little frost.

20. Two men in one day will dig up, waggon home, and trench in the garden nursery, as many as 300 plants from your own bush.

21. Choose calm, cloudy weather, when the soil is moist, but not wet, for planting from the nursery.

22. Make the pits one-half wider and deeper than the roots require, and never plant deeper than one inch over the old mark on the stem.

23. Do not plant while water is in the pit.

24. If for a belt or clump to shelter, plant not farther apart than seven feet in any direction.

25. The object of planting so close as seven feet (900 per acre) is to afford individual shelter, mutual support in several physiological relations, give plenty allowance for failures, and to thin out as required for purposes of profit and individual necessities of trees.

26. Two men should pit and plant 150 trees per day.

27. Spread out all fibrous roots in the pit, fill in the top or best loamy soil first, shaking the plant and gently pulling it up a little, when fully half the earth is in, tramp firmly with the foot, and finish up with the remainder of earth.

28. Use a variety of trees, not one or two species only, as the success will be more certain.

29. During the first season examine after high winds, and toe any openings round the plants.

30. Run no risks from animals, or breaking by snow drifts, and allow no saplings or growths from the old stumps to interfere with those planted.

31. Sheep may be admitted to graze after ten years,—no cattle for twenty.

32. The second year is the trying one; you may have buds and leaves the first year, and a dead plant the second, if good the third year, congratulate.

33. Make good any deaths for the first three years, not afterwards.

34. Always have a few hundred plants ready in your garden nursery.

35. Never burn the grass among your trees, but use the scythe when too rank.

36. Never allow the drying of clothes on the young plants.

37. Do not prune the pine, spruce, or any of the resinous sorts.

38. Thin out the least valuable sorts, or those you do not wish to retain permanently, whenever they begin to interfere six inches into the branches of each other.

39. It is no over-calculation to say that where the influence of trees is needed, the gain, after fifteen years, will amount annually to $200 over a hundred acre farm.

40. If you plant at 12 or 15 feet apart you will be ten years behind those at seven feet, when each are 25 years old.

41. We do not deserve well of our country if we cannot establish trees at a cost not to exceed 5 cents each.

42. The cost of planting one acre, irrespective of fencing, which will depend upon form and any advantages from local causes will be about:—

Lifting and trenching 900 plants in October.....	$10 00
Opening 900 pits...	17 00
Planting..	8 00
	$35 00
Keeping for three years.....	10 00
	$45 00

43 If you purchase from public nurseries, the cost will be about $100 *more.*

44. Get your Township Council to petition Government to institute a regular system of re-planting by statutory enactments.

Age of Farm Live Stock.

We add here a paragraph descriptive of the dentition of farm-stock as indicative of age. The teeth of our domesticated animals vary in size, form, character and number, in accordance with the nature of the food on which they live, and also in accordance with the peculiar organization and habits of life of the animals themselves. They are also capable of being materially influenced in their development by the system under which stock are reared. In highly bred and liberally fed animals the teeth are produced earlier than in those living under the reverse conditions. It is therefore necessary to take this point into consideration in determining the question of age. Teeth are divided into three classes, viz.: molars or grinding teeth, incisors or cutting teeth, and canines or tushes. All our domesticated animals possess the two former, but not in equal numbers. The ox and sheep have no incisors in the upper jaw, neither have they any canine teeth or tushes. Besides the three varieties mentioned, the pig has also a small tooth in each jaw situated between the corner incisor tooth and the first molar; this is termed the premolar. Each animal has two sets of teeth during life: the first are termed the milk or sucking teeth, also known as temporary or deciduous, in consequence of their being shed or cast off; the second set, by which they are replaced, are known as the permanent or adult teeth. The teeth appear in the mouth with tolerable regularity and in a certain definite order, so that they afford a fairly reliable indication of the age of stock up to the time when dentition is completed. The temporary teeth differ from the permanent in size, form and character, and are readily distinguished from each other after a little careful study. The molar teeth are distinguished numerically, counting from front to back, viz.: first, second, third, and so on. The incisors of the horse and pig are six in number in each jaw; the two middle ones are termed *centrals*, the next pair *laterals*, and the outermost *corners*. In the ox and sheep there are eight cutting teeth. Those next the centrals are spoken of as *lateral centrals*, and the other two pairs as in the horse and pig.

The following table shows the order of succession in which the changes take place in the horse, ox, pig and sheep.

HORSE.

Temporary Incisors.

Period.	*Number.*	*Position.*
At birth	2	Central.
3 to 5 weeks old	2	Lateral.
9 to 10 months old	2	Corner.

Permanent Incisors.

2 years 6 months old	2	Central.
3 years 6 months old	2	Lateral.
4 years 6 months old	2	Corner.

Temporary Molars.

At birth	3	First, Second, Third.

Permanent Molars.

1 year 3 months old	1	Fourth.
1 year 9 months old	1	Fifth.
2 years 6 to 9 months old	1	First.
3 years to 3 years 3 months old	1	Second.
3 years 3 months to 6 months old	1	Third.
3 years 9 months to 4 years old	1	Sixth.

Tushes.

4 years 3 months old	4	

From a consideration of the above tables, it will be seen that at ten months old there are present in the horse's mouth six temporary incisors, and the first, second, and third temporary molars. At one year and nine months the fourth and fifth permanent molars have appeared, and a year later the first temporary molar is changed and the two central incisors are permanent. At three years and six months old the second and third temporary molars have been replaced by permanent ones, and the two lateral incisors are also permanent. At four years and a half old the the temporary corner teeth are shed and the last molar and tusks are up, so that at this time dentition is fairly completed.

OX.

Temporary Incisors.

Period.	*Number.*	*Position.*
At birth	2	Central.
"	2	Lateral Central.
12 to 14 days old	2	Lateral.
21 to 28 days old	2	Corner.

Permanent Incisors.

1 year 9 months old	2	Central.
2 years 3 months old	2	Lateral Central.
2 years 9 months old	2	Lateral.
3 years 3 months old	2	Corner.

Temporary Molars.

21 to 28 days old	3	First, Second, Third.

Permanent Molars.

6 months old	1	Fourth.
15 months old	1	Fifth.
24 months old	1	Sixth
24 to 30 months old	2	First and Second.
30 to 36 months old	1	Third.

At one month old the ox has a full complement of incisors, with three temporary molars in each jaw. At two years old the fourth, fifth, and sixth permanent molars are present, and the two central incisors are changed. At two years and a half old the first and second molars are cast, and the lateral central incisors are permanent. At three years and three months all the temporary teeth are shed, and have been replaced by permanent ones.

SHEEP.

Temporary Incisors.

Period.	*Number.*	*Position.*
4 to 7 days old	2	Central.
" "	2	Lateral Central.
7 to 10 days old	2	Lateral.
21 to 28 days old	2	Corner.

Permanent Incisors.

1 year old	2	Central.
1 year 6 months old	2	Lateral Central.
2 years 3 months old	2	Lateral.
3 years old	2	Corner.

Temporary Molars.

14 to 21 days old	3	First, Second, Third.

Permanent Molars.

3 months old	1	Fourth.
9 months old	1	Fifth.
18 months old	1	Sixth.
18 to 24 months old	3	First, Second, Third.

In the sheep, as in the ox, all the temporary incisors are up at one month old, as well as the first, second, and third molars. At one year the two central incisors are changed and replaced by permanent teeth, and the fourth and fifth molars are up. Six months later the two lateral central and the sixth molar appear. At two years and three months the lateral permanent incisors are cut, and the first, second, and third molars are permanent. At three years old the corner incisors are shed, and shortly afterwards all the permanent teeth are in the mouth,

PIG.

Temporary Incisors and Tushes.

Period.	*Number.*	*Position.*
At birth	2	Tushes.
"	2	Corner Incisors.
1 month old	2	Central.
3 months old	2	Lateral.

Permanent Incisors and Tushes.

9 months old	2	Tushes.
" "	2	Corner Incisors.
12 months old	2	Central.
18 months old	2	Lateral.

Temporary Molars.

1 month old	3	First, Second, Third.

Permanent Molars.

6 months old	1	Premolar.
" "	1	Fourth.
9 months old	1	Fifth.
12 months old	3	First, Second, Third.
18 months old	1	Sixth.

The pig acquires a full mouth of incisor teeth at about three months old, some time previous to which three molars have appeared in each jaw —viz., the first, second, and third. At six months the premolars and the fourth permanent molar appear; in nine months the tusks and fifth permanent molar are changed. Three months later the first, second, and third temporary molars are shed and replaced by permanent ones. At eighteen months the sixth or last molar and the lateral incisor are cast, and the changes at this time are complete.

AN OLD FRIEND.—THE TRAMP.

BUSINESS.

Book-Keeping.

SHOWING WHAT ACCOUNTS ARE DEBITED AND WHAT CREDITED FOR THE DIFFERENT TRANSACTIONS THAT PRESENT THEMSELVES IN BUSINESS; TOGETHER WITH FULL DIRECTIONS FOR CLOSING EACH AND EVERY ACCOUNT IN THE LEDGER AT THE END OF THE YEAR; ALSO WITH EXPLANATION SO COMPLETE AND COMPREHENSIVE THAT NO ONE CAN FAIL TO ACQUIRE, IN A SHORT TIME, A THOROUGH KNOWLEDGE OF ACCOUNTS.

1. Book-keeping is the science of recording business transactions in a systematic manner.

2. Book-keeping is of two kinds—Single Entry and Double Entry.

3. In Single Entry we make an entry only when a personal account is affected, at which time we simply charge or credit the person—making an entry to only one account—hence, *single entry*.

4. A personal account is an account with a person, firm or corporation.

5. An account is a collection of items under one heading in the Ledger.

6. In Double Entry we make an entry for every business transaction, —making an entry to two or more accounts, according to the number of accounts affected by the transaction. Every time we debit an account for a certain amount, we credit some other account for the same amount,—hence, *double entry*.

7. A business transaction is an exchange of values.

8. BOOKS USED.—There are two kinds of books used in Book-keeping —Principal and Auxiliary or Aid Books.

9. Principal Books are those we post from and use as original books of entry. The Ledger is also a principal book.

10. By posting is meant, to transfer entries from any book to the Ledger. The books from which we usually post are: Journal (or Day Book), Cash Book, and sometimes Sales Book and Invoice Book.

11. An original book of entry is one upon which the business transaction is first recorded. The books used principally as original books of entry are: Blotter, Journal (or Day Book), Cash Book and Sales Book.

THE PRINCIPAL BOOKS.

12. The Journal.—Business men have abandoned the use of the intermediate book called the Journal, and have consolidated it with the Day Book. In the Business College style of book-keeping, merchants enter the business transactions first in the Day-Book and then journalize them by arranging the debits and credits on the Journal, after which they post from the Journal to the Ledger. The business man of to-day can find no use for this unnecessary book, the Journal; it is therefore cast aside, and the posting is done directly from the Day-Book to the Ledger. The Day Book is used as a detailed record of our business transactions. Having consolidated the two books (Day-Book and Journal), it is essential, in order to have the book complete, that it should partake of the style of both; therefore, when we record a business transaction, we first make the Journal entry, then write the explanations in as few words as possible, either under or on the same line with the entry. This book may be called either a Day Book or a Journal, but custom having made the title "Journal" preferable, it will be used hereafter instead of "Day-Book."

The Journal should have two extra columns—one for "Merchandise Debit," and one for "Merchandise Credit," which renders it unnecessary to post the merchandise oftener than once a month—crediting Merchandise account in the Ledger at the end of the month for the total sales on account, as shown by the Merchandise Credit column, and debiting it for the total merchandise purchases on account, as shown by the Merchandise Debit column. (See 342 and 347.) The left-hand column is the Debit and the right-hand column the Credit.

13. The Cash Book.—The Cash Book is a book used as a detailed record of all cash transactions. Upon the left-hand or Debit side, is recorded all *cash received;* and on the right-hand or Credit side, all *cash paid out,*—the difference in the sums total of the two sides showing, at any time, the exact amount of cash on hand. This book should always be used as a book of original entry; and posting done directly therefrom to the Ledger, as it is wholly unnecessary work and a waste of time to transfer the entries to a Journal before posting. There is no business in which the books can not be correctly kept by posting directly from the Cash Book to the Ledger. In making entries in this book, sufficient explanation should accompany the entries to make them plain. Of course, many entries require no explanation; for instance, if a person pays us on account, we simply enter his name and the amount on the debit side of the Cash

Book. When notes are paid, the name of the makers, date, time, etc., should be entered. All items on the Debit side of the Cash Book should be *credited* to the several accounts to which they belong in the Ledger, because Cash is debited; and all items on the Credit side of the Cash Book must be *debited* to the several accounts to which they belong on the Ledger, because Cash is credited. It is unnecessary to keep a Cash account in the Ledger; but, instead, enter in the trial balance, when it is taken, the balance of cash on hand, as shown by the Cash Book, which result proves the same as though such an account were kept.

14. THE SALES BOOK.—The Sales Book is a book in which the merchandise sales are recorded. It is used principally in the larger establishments, as in the smaller houses the sales on account are all recorded in the Journal.

Posting is sometimes done directly from this book to the Ledger; and sometimes the transactions are first transferred to the Journal before being posted. In posting directly from the Sales Books to the Ledger, the debits are posted to the personal accounts therein charged daily; and the total sales are carried forward until the end of the month, when the Merchandise account is credited in one entry from each Sales Book for the total sales for the month in each recorded.

15. THE LEDGER.—The Ledger is a book used to show the final summing up of all our business transactions, and the standing of all personal and miscellaneous accounts. The left-hand side of the Ledger is always the Debit, and the right-hand side the Credit.

16. When the Debit side of an account in the Ledger is the larger, the amount the Debit side exceeds the Credit is always *either a Resource or a Loss.*

17. When the Credit side of an account in the Ledger is the larger, the amount the Credit side exceeds the Debit is always *either a Liability or a Gain.*

The two preceding rules (**16** and **17**) are of the very greatest importance when we close our books at the end of the year, to find how much has been lost or gained; for we then begin with the first account in the Ledger, and carry all accounts upon which we lose or gain to the Loss & Gain account; therefore, unless we are familiar with these rules, we cannot so readily decide upon which accounts we lose or gain. The way we decide upon which accounts we lose or gain is as follows:

18. *Debit.*—When we look at an account in the Ledger, the Debit side of which is the larger, we first decide whether or not it is a Resource. If it be *anything of value belonging to us*, or any note or personal account

owing to us, it is a Resource; if not, *it must be a Loss*,—since all accounts on the Debit side of the Ledger must be either Resources or Losses. If the account be a Resource, we pass it by and do nothing with it; if a Loss, we balance the account and carry the Loss to the Debit side of Loss & Gain account.

19. *Credit.*—On the other hand, when we look at an account in the Ledger, the Credit side of which is the larger, we first decide whether or not it is a Liability. If it be any note or personal account *we owe*, it is a Liability; if not, *it must be a Gain*,—since all accounts on the Credit side of the Ledger must be either Liabilities or Gains. If the account be a Liability, we pass it by and do nothing with it; if a Gain, we balance the account and carry the Gain to the Credit side of the Loss & Gain account.

RESOURCES.

20. A Resource is anything of value belonging to us, such as: Cash, Merchandise, Store Fixtures, Real Estate, Notes made by other parties *payable to us* (Bills Receivable), etc., etc., or any personal account *owing to us*.

LIABILITIES.

21. A Liability is any unpaid note made by us *payable to other parties* (Bills Payable), or any personal account *we owe*.

THE AUXILIARY OR AID OF BOOKS.

22. Auxiliary Books are used to classify business transactions; they are also used as an aid to the principal books.

23. THE BLOTTER.—The Blotter is a book used merely as a memorandum book. Many persons improperly call the Day Book (or Journal) a Blotter. Business men wishing only one person's handwriting in the principal books, keep a book which they use when this person is absent from his post of duty, in which to make a memorandum of the transactions that occur during his absence, and when he returns they will be copied into the proper books.

24. THE INVOICE BOOK.—The Invoice Book is a book in which to file invoices or bills of goods we buy. It may have a single money column at the right margin of the page, in which to carry out the amount of each bill as it is pasted in the book; posting may be done directly from this book to the Ledger,—each bill credited to the account to which it belongs, the total of the money column carried forward till the end of the month, and then posted to the Debit of the Merchandise account in one entry. How-

ever, as the book is quite expensive, and as a great amount of time is required in which to paste the invoices therein, the author would recommend the system suggested in paragraph No. 309.

25. The Bill Book, or Bills Receivable and Bills Payable Book, is used as a memorandum book for Notes and Time Drafts (Acceptances), showing when they become due.

A MISTAKE IN BOOK-KEEPING WILL NEVER BE MADE IF THE FOLLOWING RULES ARE AT ALL TIMES STRICTLY ADHERED TO.

26. *First.*—Debit what we *receive*. "Why?" Because what we receive costs us something of value.

27. *Second.*—Credit what we *give*. "Why?" Because what we give produces us something of value.

28. *Third.*—For every amount entered to the Debit side of an account or accounts in the Ledger, enter a like amount to the credit side of some other account or accounts *for the same amount.*

THE FOUNDATION

UPON WHICH TO BUILD YOUR KNOWLEDGE OF BOOK-KEEPING.

THE CORNER STONE.

In one side of the Corner Stone we will have cut in large letters the solitary motto—SYSTEM; in the other side we will have cut our Coat of Arms, interwoven in which will be found "*Multum in parvo.*" This we call

DOUBLE ENTRY BOOKKEEPING "IN A NUTSHELL."

29. DEBIT WHAT WE **RECEIVE.**

31. *If we receive Cash, debit Cash.*

33. " " *Mdse.*, " *Mdse.* [*able.*

35. " " *Note*, " *Bills Receiv-*

30. CREDIT WHAT WE **GIVE.**

32. *If we give Cash, credit Cash.*

34. " " *Mdse.*, " *Mdse.* [*able.*

36. " " *Note*, " *Bills Pay-*

37. Whenever we Debit an item, it is always either to increase our Resources or our Losses, or to decrease the personal accounts or notes we owe (Liabilities).

38. Whenever we Credit an item, it is always either to increase our Liabilities or our Gains, or to decrease the personal accounts or notes owing to us (Resources).

THE JOURNAL.

39. All items in the Miscellaneous Debit column are posted to the DEBIT SIDE OF THE LEDGER.

40. All items in the Miscellaneous Credit column are posted to the CREDIT SIDE OF THE LEDGER.

When we have extra columns in the Journal, we post only the items found in the Miscellaneous Debit and Miscellaneous Credit columns during the month; and at the end of the month we post the total amounts of the Mdse. Dr. and Mdse. Cr. columns to the Merchandise account. (See par. 12.)

THE LEDGER.

41. On the Debit side of the Ledger, we find nothing but RESOURCES AND LOSSES.

42. On the Credit Side of the Ledger, we find nothing but LIABILITIES AND GAINS.

When we first enter into business, and immediately after we have closed the books at the end of the year, there are no open accounts in the Ledger except those which are either Resources or Liabilities.

THE CASH BOOK.

43. Enter on the Debit side all CASH RECEIVED.

45. All items on the Debit side of the Cash Book are posted to the CREDIT SIDE OF THE LEDGER.

44. Enter on the Credit side all CASH PAID OUT.

46. All items on the Credit Side of the Cash Book are posted to the DEBIT SIDE OF THE LEDGER.

The Cash Book is the Cash Account,—consequently the Cash Account is debited or credited by simply entering an amount on the debit or credit side of the Cash Book. So when Cash is *debited*, all the accounts on that side of the book must be *credited*; and when cash is *credited*, all accounts on that side of the book must be *debited*.

47. Bank Drafts and Sight Drafts belong to the Cash Account.

48. NOTHING BUT NOTES AND TIME DRAFTS (OR ACCEPTANCES) BELONG TO THE BILLS RECEIVABLE AND BILLS PAYABLE ACCOUNTS.

J. H. GOODWIN—STOCK ACCOUNT.

CLOSING NO. 1.

51. Debit at the end of the year for *net private loss*, as shown by his private account,

—or—

CLOSING NO. 2.

53. Debit at the end of the year for *net business loss*, as shown by the Loss & Gain account; and for loss on "Private account." (See 288.)

49. Open a "Stock account" for each member of the firm, and credit same at commencement of business for net amount by each invested, or *net worth*, which is found by deducting the sum total of his Liabilities from the sum total of his Resources. (See 348 to 366; also 315.)

50. Credit for all additional investments.

CLOSING NO. 1.

52. Credit at the end of the year for *net private gain*, as shown by his private account.

—or—

CLOSING NO. 2.

54. Credit at the end of the year for *net business gain*, as shown by the Loss & Gain account.

55. *Directions for closing the Stock Account at the end of the year:*

1st.—*According to Closing No.* 1—Bring over from the respective Private accounts of each member of the firm the *net private loss* or *net private gain*, as the case may be, and debit or credit the respective Stock accounts for such loss or gain. (See 51 and 52.)

2nd.—*According to Closing No.* 2.—Bring over from the Loss & Gain account the share of the *net business loss* or *net business gain*, as the case may be, and debit or credit the respective Stock accounts for such loss or gain. (See 53 and 54.) Then bring over from the Private accounts of the respective members the loss on such accounts, and debit the respective Stock accounts for such losses. (See 53.)

3rd.—Now find the difference between the two sides of this account, and write on the debit side "To Balance" *in red ink;* entering this difference, which will make the account balance.

4th.—Rule the closing lines in red ink, and enter the total amounts between these lines. (See 801 to 805.)

5th.—Bring down on the credit side of this account, below the closing lines, *in black ink*, the difference as found in "3rd" above, or the *present worth* of the partner, writing the date beginning of the new year, "By Present Worth," and the amount.

56. EXPLANATION.—"Stock" is a title used to represent the amount invested in the business. There are several methods of treating this account, among which are the following: 1st.—To call the account "Stock," and credit it for the entire investment of the firm (regardless of how many members the firm may consist of), and debit it or credit it at the end of the year for the entire net loss or entire net gain of the firm, allowing the partnership contract to stipulate how much is by each member invested, and what proportion or percentage of the gain or loss each member is to share. 2.—Some call the account "Capital," while others use the firm name instead: as, "J. H. Goodwin & Co.," treating it the same as "Stock," described in "1st." 3.—The most common and most practical method, however, is to open a separate Stock account for each member of the firm, and credit each for respective investment, as per system shown in this book. (See 49.) When there is but a single proprietor in the business, he may with propriety call the account "Stock," and treat it the same as described in 49.

J. H. GOODWIN—PRIVATE ACCOUNT.

57. Debit for all cash drawn for private use.

58. Credit for salary allowed, if any.

59. Debit for all merchandise taken from the store for private use.

60. CLOSING No. 1.

Debit, at the end of the year, in black ink, for his share of the *net business loss*, as shown by the Loss and Gain account.

61. CLOSING No. 1.

Credit, at the end of the year, in black ink, for his share of the *net business gain*, as shown by the Loss and Gain account.

62. CLOSING No. 2.

If the credit side of this account exceeds the debit, we find the difference between the two sides, and debit this account, in red ink, "To J. H. Goodwin, Stock account," for the difference, and transfer that difference to the credit side of the J. H. Goodwin Stock account, in black ink. (See 52.)

63. CLOSING No. 2.

If the debit side of this account exceeds the credit, we find the difference between the two sides, and credit this account, in red ink, "By J. H. Goodwin, Stock account," for the amount lost on his private account, and transfer that loss to the debit side of the J. H. Goodwin Stock account, in black ink. (See 51.)

64. *Directions for closing the Private accounts at the end of each year:—*

CLOSING No. 1. 1st.—According to Closing No. 1, we bring over from the Loss and Gain account, at the end of the year, the *net business loss* or *net business gain*, as the case may be, crediting or debiting the Private account for such gain or loss.

2nd.—We then find the difference between the two sides of this account, and if the credit side be the larger, write on the debit side, in red ink, "To J. H. Goodwin, Stock account," and enter the amount in the debit column.

3rd.—Now rule the closing lines, and bring down the total amounts between the lines.

4th.—Now carry this difference (the *net private gain*) to the credit side of the "J. H. Goodwin, Stock account," in black ink. (See 52 and 55.)

5th.—If, on the other hand, we find the debit side of this account to be the larger, we write on the credit side, in red ink, "By J. H. Goodwin, Stock account," and enter the difference in the credit column: then rule the closing lines, and carry the difference (*net private loss*) to the "J. H. Goodwin Stock account," in black ink. (See 51.)

CLOSING No. 2.—According to closing No. 2, we do not bring over from the Loss and Gain account the net business loss or gain at the end of the year; but we simply find the difference between the two sides, and transfer that difference to the "J. H. Goodwin Stock account." We then proceed to close the account the same as per instructions in 2nd, 3rd, 4th, and 5th of Closing No. 1, above, except that the phrases "net private gain" and "net private loss," enclosed in parentheses in 4th and 5th, do not apply here; for here it would be either a *loss on private account* or a *credit by private account.*

65. EXPLANATION.—We open a Private account in the Ledger for each member of the firm, and treat it as per instructions above. It is the custom of some firms to allow the respective members each a salary, against which each for himself may draw for his personal use. When this is done they are credited for the salary monthly or yearly, as they prefer; and at the end of the year the account is closed the same as though no salary had been allowed, the business losses showing so much more on account of the increase in the "Salaries account," and the "Private account" of each showing so much more private gain; so the business is not in the least affected by so doing.

MERCHANDISE.

66. Debit, at commencement of business, "To Inventory" for amount of Mdse. on hand, as shown by the Inventory or Account of Stock.

67. Debit for all Mdse. we buy.

69. Debit for all Mdse. returned to us after we have sold it.

68. Credit for all Mdse we sell.

70. Credit for all Mdse. we return to other parties after we have bought it.

71. *Directions for closing the Mdse. account at the end of the year:*

1st.—Write on credit side, "By Inventory," *in red ink*, for the amount of *Mdse. now on hand*, as shown in the inventory.

2nd.—Now find the difference between the two sides of this account (Inventory included), and the amount the credit side exceeds the debit will be the *gain on Mdse.*; after which, write on the debit side of this account, in red ink, "To Loss & Gain," for amount gained, which will now make the account balance.

3rd.—Rule the closing lines, and write the total amounts between the lines.

4th.—Write on the debit side of this account, *below the closing lines*, in black ink, "To Inventory," and bring down the amount of Mdse. now on hand for the beginning of the new year.

5th.—Carry amount gained on Mdse. over to the Loss & Gain account, —writing on the credit side of that account, in black ink, "By Mdse.," for the amount gained.

This concludes the closing of the Mdse. account. Now go back to the article "The End of the Year," and see what next to do. (See 289 and 290.)

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72. EXPLANATION.—The object of crediting this account at the end of the year "By Inventory," is simply to find how much we have gained on the merchandise sold during the year; for, after we have balanced the Mdse. account, we bring down on the debit side of this account the amount of the inventory for the commencement of the new year. Consequently, having credited this account "By Inventory," and debited it "To Inventory," for the same amount, the balance of the Ledger is not in the least affected; and in transferring the gain on merchandise which was found on the credit side of the Mdse. account, to the same side (credit) of the "Loss & Gain account," the balance of the Ledger is not in the least affected in the entire closing of the Mdse. account. We debit Mdse. for what it *costs us*, and credit it for what we sell it for; hence, when we take an account of stock (find the value of the merchandise we have on hand) at the end of the year, and value it at what it would cost to lay it in the house at the time the Inventory is taken, we add the amount sold during the year (credit side of Merchandise account) to this amount on hand, and we find the amount the credit side exceeds the debit must be the amount for which we have sold the merchandise more than it cost us, or the *net gain on sales*. For example: If we buy 100 barrels of flour at $8 per barrel, we debit Merchandise for $800. During the year we sell 60 barrels at $10 per barrel, and credit Merchandise for $600. At the end of the year we take an inventory or account of stock, and find that we have 40 barrels on hand, which we must value at what it would cost if we had to buy it

then. We will suppose that the price of flour has declined $1 per barrel, and we could therefore buy it at $7 per barrel. Our 40 barrels remaining unsold would then be worth only $280. This amount we add to the amount sold during the year ($600), which makes a total of $880. We now find the amount that this—the credit side—exceeds the debit, which gives $80, or our *net gain on merchandise.*

ILLUSTRATION—MERCHANDISE ACCOUNT.

1882.			1882.		
Feb'y 20	Bought 100 brls flour,	$800 00	May 10	Sold 30 brls flour,	$300 00
Dec'r 31	To loss and gain (net gain)	80 00	Dec'r 12	" " " "	300 00
			31	Inventory (40 brls $7),	280 00
		$880 00			$880 00

73. ANOTHER ILLUSTRATION.—We debit Mdse. at commencement of business for the value of the merchandise then on hand, and we debit it during the year for all the merchandise we buy; at the end of the year we ascertain how much of this merchandise we have on hand, valuing it at its *present worth*, or what it would cost to lay it in the store at this present time. We then find the difference between the value of the merchandise we now have on hand, and the total amount of the debit side of the Mdse. account, which will show the *cost of the goods we have sold*; and by referring to the credit side of the Mdse. account, we find how much we have realized for the goods we have sold. We now find the difference between the cost of the goods sold and the amount for which we sold them, and this difference will be the *gain on Mdse.* We then transfer that gain to the "Loss & Gain account," close the Mdse. account "By Balance," and bring down on the debit side again, the balance of the Mdse. now on hand.

74. It is customary among many business houses to allow a discount for cash on bills paid within a certain time. If we are allowed a discount for cash for goods we buy, the simplest way is to deduct the amount of the discount *on the bills* before entering them, and pay these bills within the time allowed for discount. If we allow a discount on *our* bills paid within a certain time, it is the easier way to give the parties credit in the Cash Book, when they pay, for the full amount of the bill, and debit Mdse (or Discount) on the opposite side of the Cash Book (credit side) for the discount allowed. (See 497, 498 and 534.) Some houses keep a "Discount account" for these discounts; but it is the same in effect, and less trouble, to make the entries to the Mdse. account. In reality we get so much less

for the goods than we anticipated when we sold them,—consequently we have credited Mdse. for just the amount of that discount too much, and it is now proper to debit the Mdse. account for the amount of that discount.

CASH.

75. Since the Cash Book is the Cash account, this account is never kept in the Ledger by the practical business man; but there are a few "old fogies," and more business colleges, who still adhere to the antiquated system. The account is here given in order to show how it was kept by our forefathers. However, all these rules, forms, etc., may be judiciously used, by applying them to the debit and credit sides of the Cash Book, showing when we enter an amount on the debit side of the Cash Book, and when on the credit side.

76. Debit, at commencement of business, for amount of cash on hand, including the amount on deposit in the bank; for since it is not necessary to keep a bank account, this is also called cash on hand. (See 86½.)

78. Debit for all cash we receive.

80. Debit for all checks we receive.

81. Form of check we receive:

No. 1. LONDON, Dec. 4, 1882.

CANADIAN BANK OF COMMERCE.

Pay to Goodwin & Emerson, or order, One hundred four $\frac{00}{100}$ Dollars.

$104. G. W. BENNETT.

83. Debit for all bank drafts we receive.

77. Credit for all cash we pay out.

79. Credit for all checks we give.

82. Form of check we give:

No. 2. TORONTO, Dec. 30, 1882.

IMPERIAL BANK OF CANADA.

Pay to J. K. Armsby & Co., or order, Twenty-eight $\frac{94}{100}$ Dollars.

28\frac{94}{100}$ GOODWIN & EMERSON.

84. Form of bank draft we receive:

$100 $\frac{00}{100}$ ONTARIO.

BANK OF TORONTO.

Jan. 3rd, 1882.

Pay to the order of J. H. Goodwin & Co.,
One hundred and $\frac{00}{100}$ Dollars.

To Union Bank, No. 3. Montreal. } G. B. HOLLAND, Cashier.

85. Debit for all sight drafts we receive.

Form of sight draft we receive:

$114 $\frac{30}{100}$ MONTREAL, Jan. 6, 1882.

At sight with exchange, pay to the order of J. H. Goodwin & Co., One hundred and fourteen and $\frac{30}{100}$ Dollars, value received, and charge same to account of S. J. MURPHY.

To Campbell & Son, Toronto.

No. 4.

86. EXPLANATION.—Bank Drafts, Sight Drafts, Checks, Pension Checks, Money Orders, Due Bills, and all orders for which we can get cash upon presentation, are called *Cash;* consequently, when we receive any of these we debit Cash, and when we give any out we credit Cash. The debit side of the Cash account is always the larger, as, of course, it is impossible to pay out more cash than we receive. (See 13 and 43 to 46.)

86½. BANK ACCOUNT.—It is unnecessary labour to keep a Bank account in the Ledger. It is now the custom with nearly all practical business men to call the amount on deposit in the bank so much cash on hand, and to keep no account with the bank in their Ledger. Instead of this, they keep their account with the bank on the stub of the check-book in the following manner: When they begin using a check-book they enter on the stub of the book the amount they have on deposit in the bank and when they make a deposit they add the amount deposited to the amount they had on deposit; then when they draw checks on the bank they deduct the amounts of such checks from the amount on deposit. This shows, at any time, the amount to their credit in the bank. Of

course, besides a check-book, a bank-book is kept, in which the deposits that are made are entered by the bank-teller.

The checks drawn on the bank are usually entered in the bank-book once a month, at which time the bank-book is balanced by the bank-clerk and shows how much is on deposit or to our credit in the bank, which amount should just agree with the amount on deposit, as shown by the stub of our check-book, unless there are checks out that have not yet been presented to the bank for payment. When the banker has "written up" our bank-book he hands us, stamped "Paid," all the checks that we have drawn on the bank, and these he calls "vouchers returned."

MANUFACTURING.

87. Debit, at commencement of business, for value of manufactured goods on hand, as shown by the Inventory.	**88.** Credit for all manufactured goods we sell.
89. Debit for all goods returned to us after we have sold them.	

90. *Directions for closing the Manufacturing account at the end of the year:*

1st. Write on the credit side "By Inventory" for the value of the manufactured goods we now have on hand.

2nd.—Close all the accounts we have kept in the Ledger to show the amounts consumed in the different articles of manufacture, and transfer amount lost on all such accounts to the debit side of this account, designating the accounts upon which such accounts were lost. Also, close the "Labour account" and transfer the amount lost on labour to the debit side of this account.

3rd.—Now proceed with the closing of this account precisely the same as with the closing of the Merchandise account Par. 71—from 2nd to 5th, inclusive—bringing down on the debit side of the Manufacturing account, after it has been closed, the value of the manufactured goods on hand for the beginning of the new year.

91. EXPLANATION.—When we manufacture the goods we sell, we call, the account upon which we speculate "Manufacturing," or "Manufacturer," instead of "Merchandise." We debit this account when we com-

mence business, if we have any manufactured goods on hand for the then present worth of those goods. We debit this account at the end of the year for what the goods cost us which we manufactured during the year. We ascertain what the goods cost us in the following-described way: We open separate accounts at the beginning of the year, for all such articles as we are going to buy to use in the manufacture of our goods; and during the year, whenever we buy anything to use in the manufacture of our goods, we charge the articles to the respective accounts to which they belong. At the end of the year we take an inventory of each of these articles, to ascertain the value of what remains unused, after which we credit each of these accounts "By Inventory," in red ink, for the respective amount on hand; we then find the difference between the two sides of each account, and credit it "By Manufacturing," in red ink, for that difference—the difference being the amount of that article actually used in the manufacture of the goods. We now close the account and bring down on the debit side, below the closing lines, the amount remaining unused for the beginning of the new year; after which we carry over to the debit side of the "Manufacturing account" the amount used or lost on this "Article account"—all the accounts of articles used in the manufacture of the goods being treated in the same manner. For example: If we were manufacturing woollen goods, we would keep a "Wool account," an "Oil account," a "Dye Stuffs account," etc., etc. At the end of the year we would ascertain how much of each—wool, oil and dye stuffs—we had on hand still unused, and would close the accounts according to the instructions above,—carrying amounts lost on such accounts to the debit side of "Manufacturing account," instead of to "Loss & Gain," We keep a "Machinery account," and debit it for the cost of all machinery we buy. During the year we charge this account for all repairs on the machinery for which we have to pay, and at the end of the year we approximate the value of the machinery, allowing something for the "wear and tear," after which, we close this account the same as we do the others, carrying the amount lost to the debit side of the "Manufacturing account." We keep a "Labour account," in order to show the amount paid our employés for making the goods, which account we also close and carry to the debit of "Manufacturing." The "Freight and cartage account" may also with propriety be closed and carried into the "Manufacturing account," instead of to "Loss and Gain." After all of these accounts have been carried into the "Manufacturing account," we credit this accout "By Inventory," in red ink, for the present worth of the manufactured goods we have on hand. The books are then closed the

same as in any other business,—the amount gained on the "Manufacturing account," being also carried into the "Loss & Gain account."

STORE AND OFFICE FIXTURES.

92. Debit, at commencement of business, for value of store and office fixtures on hand.

93. Debit for everything we buy for fitting up the store and office, such as counters and shelves, scales, safes, stoves, desks, etc., etc. Teams and waggons, are also often charged to this account, but it is customary and the most practical way to open a "Team and Waggons account."

94. Credit for anything we sell, for which we charged this account when we bought it.

95. *Directions for closing the Store and Office Fixtures account at the end of the year:*

1st.—Write on the credit side "By Inventory," in red ink, for the value of the store and office fixtures on hand.

2nd.—Find the difference between the two sides of this account (Inventory included), and the amount that the debit side exceeds the credit will be the amount lost on store and office fixtures; after which, write on the credit side of this account, in red ink, "By Loss & Gain" for amount lost, which will now make the account balance.

3rd.—Rule the closing lines and write the total amount between the lines.

4th.—Write on the debit side of this account, below the closing lines, in black ink, "To Inventory," and bring down the value of the store and office fixtures now on hand, for the beginning of the new year.

5th.—Carry amount lost on store and office fixtures over to the "Loss & Gain account,"—writing on the debit side of that account, in black ink, "To Store & Office Fixtures" for the amount lost, which concludes the closing of the Store and Office Fixtures account.

96. EXPLANATION.—We take an inventory of Store and Office Fixtures at the end of the year the same as of Mdse., valuing them also at the present worth, and not at what they cost us. After having estimated the present value, we close the account according to instructions above given.

After having credited the account "By Inventory," the debit side will be the larger, and the difference between the two sides will be a *loss*, as there is always more or less "wear and tear" on the fixtures during the year; consequently, they are constantly depreciating in value. If our fixtures are apparently in as good order at the end of the year as they were at the beginning, we call them worth the whole amount for which the account is charged, and allow it to stand untouched, calling it a Resource. Some houses call the account "Store Fixtures;" others call it "Office Fixtures," carrying all the store and office fixtures into the same account.

REAL ESTATE.

97. Debit, at commencement of business, for value of any Real Estate we own, as lots and farms.

98. Debit for all lots and farms we buy.

99. Credit for all lots and farms we sell.

100. EXPLANATION.—We allow this account to stand untouched from year to year and call it a Resource, unless the property increases or decreases in value; in such a case we close it the same as we do the Mdse. or Store Fixtures accounts.

101. If we are in a wholesale business, we sometimes have customers who become financially embarrassed or "hard up;" and we, in order to get good security for the payment of the amount due us, take from these customers mortgages on any lots or farms which they may own. If these customers cannot pay when these notes become due, we foreclose the mortgages, when, in some Counties, these lots and farms come into our possession. We can then debit "Real Estate" for such lots and farms; or, open an account for each lot or farm, naming it after the former owner, as: "Bowpark Farm," "Johnson Lot," etc., with address or location. The latter is recommended as the better method. When these accounts are opened, they are treated the same as the "Real Estate account."

BUILDING.

102. Debit, at commencement of business, for value of any buildings we may own.

103. Debit for cost of any buildings we may build or buy.

104. Debit for all repairs we have made on the building.

105. Credit for any buildings we may sell.

106. This account is closed exactly the same as the Store and Office Fixtures account. (See 95 and 96.)

BILLS RECEIVABLE (NOTES RECEIVABLE.)

107. Debit, at commencement of business, for all notes and acceptances (time drafts), we have on hand, made by other parties payable to us.

108. Debit for all notes we receive made by other parties payable to us.

113. Form of Note we receive:

200\frac{00}{100}$ LONDON, Dec. 4, 1882.

Ninety days after date I promise to pay to the order of Goodwin & Emerson Two hundred and $\frac{00}{100}$ Dollars.

Value received, with interest at rate of 8 per cent. per annum, at Canadian Bank of Commerce, here.

No. 6. G. W. BENNETT.

114. Debit for all time drafts we draw on other parties, payable to ourselves, which they accept.

115. Time Draft—illustration of above:

190\frac{00}{100}$ TORONTO, Dec. 8, 1882.

Ninety days after date pay to the order of ourselves One hundred ninety and $\frac{00}{100}$ Dollars, with interest at rate of 8 per cent. per annum, at Imperial Bank of Canada, Toronto. Value received, and charge same to account of

GOODWIN & EMERSON,

To Frank Richardson, Ottawa.

No. 7.

109. Credit when those notes and acceptances which we have received from other parties are paid.

110. Credit for all notes and acceptances we get discounted.

111. Credit for all notes we sell.

112. Credit for all notes we endorse over to other parties as a payment on an account or a note we owe them.

116. Debit for all notes and time drafts made by one party, payable to another, and endorsed over to us.

117. Note—illustration of above:

$1000.00 GUELPH, Nov. 14, 1880.

Sixty days after date I promise to pay Selden A. Emerson, or order, One thousand and $\frac{00}{100}$ Dollars, with interest at 8 per cent, per annum, at Ontario Bank of Toronto.

Value received.

No. 8. HUGO SMITH.

Back of above note endorsed over to us:

Pay order of
Goodwin & Emerson.
Selden A. Emerson.

118. *Directions for balancing the Bills Receivable account at the end of the year:*

1st.—Find the difference between the two sides of this account, then write on the credit side "By Balance," in red ink, for this difference, which will make the account balance.

2nd.—Now rule the closing lines and write the total amounts between these lines.

3rd.—Write on the debit side of this account, below the closing lines, in black ink, "To Balance," and the amount of the difference, as found above, which must exactly agree with the notes we have on hand.

119. EXPLANATION.—Bills receivable account is an account of Notes and Time Drafts (or Acceptances (*receivable to us*, hence "Bills or Notes Receivable."

120. This account is, in effect, in one respect like the Cash Book or Cash Account; for, when we receive a note, we *debit* Bills Receivable, and when we give out that note, we *credit* Bills Receivable. We debit the account for all the notes and acceptances we receive, and credit it

whenever we return or give out any of those notes or acceptances; therefore, the difference between the two sides of this account should at any time show the exact amount of notes we have on hand remaining unpaid. The similarity of the Cash account to the Bills Receivable account arises in this: We debit Cash for the Cash we receive, and credit Cash whenever we give out any,—the difference between the two sides of the account showing, at any time, the exact amount of cash on hand.

121. The Bills Receivable account is, in another respect, like a personal account owing us; for, when a person gives us a note, we give that person credit and transfer the debt which heretofore stood on his account to the debit of Bills Receivable account, which now shows that the Bills Receivable account is owing us instead of the person. Illustrating the account in this way, we will say that this person is responsible for "Mr. Bills Receivable's" indebtedness, and is obliged to pay it when it becomes due; so when he pays the note we credit "Mr. Bills Receivable," and write in the explanation column the name of the maker of the note.

122. The three principal objects in taking notes from our customers are: 1st.—To have written acknowledgments from the parties of their indebtedness, so that if we were obliged to enter upon legal proceedings in order to collect the amounts, we would not have to prove the indebtedness; whereas if they were open accounts, we would sometimes be obliged to do so. 2nd.—Another object is,—if we are in need of money, we take these notes and discount them in the bank, getting the money to use in that way. 3rd.—Still another is, in order to get interest on the accounts; for some persons object to paying interest on their accounts after they are past due, but as it is customary to give notes made with interest for accounts past due, they do not object to paying it in this way.

123. When the maker of a note cannot pay its full face value when it becomes due, but makes a part payment, we credit "Bills Receivable" for the amount paid, and endorse on the back of the note the amount of the payment, in the plainest possible manner, thus: "January 12, 1881, paid $50.00."

124. When the maker of a note cannot pay when it becomes due, but wishes to "renew the note," the renewal may be recorded in any one of the three following described ways: 1st.—By simply taking the Bill Book (see 25) and writing in the "Remarks" column, opposite the entry for the old note, "Renewed," and then entering on this same book the new note just received; or, 2nd.—By debiting the person and crediting Bills Receivable for the old note surrendered, and then crediting the person and debiting Bills Receivable for the new note received; or, 3rd.—By debiting Bills

Receivable for the new note received, and crediting Bills Receivable for the old note surrendered. The first and second methods are the most common in use, and are therefore recommended.

125. When we get a note discounted in the bank, the note is paid so far as we are concerned, so we must credit "Bills Receivable" for the full face of the note on the debit side of the Cash Book, and debit "Interest" on the opposite side of the Cash Book for the amount of the discount. (See 489 and 509; also 153.) If, on the other hand, the note is drawing interest, the rate per cent. of which is satisfactory to the bank, and some interest has already accrued at the time we get the note discounted, the bank then pays us the full face of the note plus the accrued interest; we then credit "Bills Receivable" for the face of the note, and "Interest" for the amount received for accrued interest. (See 495 and 496.)

126. If, after our having a note discounted in the bank, the maker should fail to pay when it becomes due, we are then obliged to "take up the note," *i. e.*, give the bank a check or the money for the face of the note and the interest accrued to date, when the note again becomes our property; therefore we debit "Bills Receivable Account" for the face of the note, and "Interest Account" for the accrued interest. This note being now called a "past-due note."

127. When a note is received, which was made by one party payable to another and endorsed over to us, care should be taken to see whether there are any payments endorsed on the note; for, of course, a note is worth only its face *less the payments*, if any have been made.

128. As the difference between the two sides of the Bills Receivable account should at any and all times exactly agree with the total value of the notes we have on hand, the book-keeper should take the notes as often as once a month, put down the value of each on a piece of paper, and afterward find the total of these amounts to see whether it agrees with the amount required by the Bills Receivable account. As much responsibility rests upon the book-keeper in having the notes on hand agree with the Bills Receivable account, as does in having the cash on hand agree with the Cash Book; for, if the notes on hand do not agree with the Bills Receivable account, it shows "there is a nut loose somewhere." When we post an amount to the Bills Receivable account, we write in the explanation column the name of the maker of the note; the date and the time may also be added in the explanation, so that if there be a mistake on the account we may check off from the credit side to the debit the notes that have been paid, and in this way ascertain where the mistake is.

BILLS PAYABLE (NOTES PAYABLE).

134. Debit when we pay the notes add time drafts we owe.

129. Credit, at commencement of business, for all notes and time drafts we owe.

130. Credit for all notes we give to other parties, made by us payable to them.

131. Note we give—illustration of above:

$189\frac{30}{100}$ TORONTO, Dec. 8, 1882.

Sixty days after date we promise to pay to the order of Proctor & Gamble, One hundred eighty-nine and $\frac{30}{100}$ Dollars, at Imperial Bank of Canada, Toronto. Value received.

No. 9. GOODWIN & EMERSON.

132. Credit for all time drafts drawn on us by other parties we accept.

133. Time Draft—illustration of above:

$218\frac{60}{100}$ NEW YORK, Dec., 3, 1882.

Sixty days after date, with exchange on New York, pay to the order of ourselves, Two hundred eighteen and $\frac{60}{100}$ Dollars.

Value received, and charge same to account of ARBUCKLE BROS.

To GOODWIN & EMERSON, Toronto.

No. 10.

Acceptance of above Time Draft:

Accepted, payable at the Imperial Bank here, Toronto, Dec. 10, 1882.

GOODWIN & EMERSON.

135 *Directions for balancing the Bills Payable account at the end of the year:*

1st.—Find the difference between the two sides of this account, and then write on the debit side, in red ink, "To Balance" for that difference, which will make the account balance.

2nd.—Now rule the closing lines and bring down the total amounts between the lines.

3rd.—Write on the credit side, below the closing lines, "By Balance," in black ink, for the difference above found, which difference should exactly agree with the notes and acceptances we owe.

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136. EXPLANATION.—Bills Payable account is an account of Notes and Acceptances given by us, and consequently *payable by us;* hence, *Bills (or Notes) Payable.* We credit Bills Payable when we give a note or accept a time-draft; and when we pay that note or draft we debit Bills Payable.

137. This account is, in effect, like a personal account we owe; for when we give a person a note, or accept a time-draft which he draws on us, we debit this person's account, and transfer the credit which heretofore existed on same to the credit of Bills Payable account; so that, illustrating the account in this manner, we are now owing "Mr. Bills Payable" instead of this person. Now, when the amount becomes due, this "Mr. Bills Payable" "comes to us in such a questionable shape," being in the form of a *note*, that we must pay him. We then debit "Mr. Bills Payable," in order to show that the debt exists no longer, in so far as that one amount is concerned.

138. The difference between the two sides of this account should at any time exactly agree with the notes and acceptances we have outstanding, or the notes we have given and the time-drafts we have accepted which still remain unpaid.

139. When we make an entry on the Bills Payable account, we always write in the explanation column the name of the person to whom we gave the note; the date of the note and time may also be added, so that if there be a mistake in this account, *i.e.*, if at any time the amount of our notes outstanding does not agree with the difference between the two sides of this account, we may then check from the debit side to the credit the notes that have been paid, and in this way find the mistake.

140. The reason we give notes and accept time-drafts is, because the parties from whom we buy request us to do so, with the same objects in view which we have when we take notes from our customers. (See 122.)

BILLS RECEIVABLE AND BILLS PAYABLE ACCOUNTS.

141. Beginners in the study of book-keeping sometimes get these two accounts confused, but all doubts may at such times be easily and quickly dispelled by soliloquizing in the following way:—"Will the money be *receivable to*, or *payable by* us when this note is due? If *receivable* to us, Bills Receivable account is affected, and we must make the entry to the Bills Receivable account; if *payable* by us, Bills Payable account is affected, and we must make the entry to the Bills Payable account."

142. Accepting a time-draft which a person draws upon us, is exactly the same in effect as giving that person a note; for, by so doing, we promise to pay him at the expiration of a certain period of time, with or without interest, for value received, a certain amount,—which is neither more nor less than we do when we give a note. When a person accepts and returns to us a time-draft which we made on him, it is, of course, the same in effect as though we received a note from him. Time-draft and Acceptance are but different names for the same paper. Acceptance is the one most in use, but Time-Draft is the term adopted in this book, as it is more readily comprehended by the pupil—it showing, at once, that a certain *time* is given in which to pay the *draft*. Time-Drafts are of no value whatever, *until they have been accepted* and returned to the drawers, or the persons who draw the drafts; as, not until then is a written promise to pay made; therefore, no entry is made until the draft has been returned accepted, when the entry is made precisely the same as if a *note* had been received or given.

143. There are four kinds of drafts, viz.: Bank Drafts, On-Demand Drafts, Sight Drafts, and Time Drafts. The first three belong to the Cash account, and the last, as heretofore explained, belongs to the Bills Receivable and Bills Payable accounts. A Bank Draft is a draft drawn by one bank on another. An On-Demand Draft is a draft drawn by one person upon another, and is payable on demand, or immediately. A Sight Draft is a draft drawn by one person upon another "at sight," and if accepted by the person upon whom it is drawn, is payable just *three days* after it is accepted. Drafts are sometimes drawn at "one, three, or five days' sight," and made payable to either a banker or some other person. When they are thus drawn, we accept them in the same manner that we would a Time Draft, but make no entry of it,—simply making a memorandum in lead pencil on their account in the Ledger similar to

this: "Acc. St. Draft," to show that we have accepted such a draft and when the paper becomes due we pay it and charge the person direct, as we would have done had he drawn a draft "on demand" and we paid it at once. When drafts are drawn in this way, and are accepted by us, the bank to whom the draft is made payable leaves a "notice" with us showing when the paper falls due, the amount of same, also collection charges, if any. When due, we pay the draft, charge the person and credit Cash, as it is a cash transaction. The object in drawing drafts "at sight," or "at one, three, or five days' sight," is so as not "to take the person by surprise," but to give him a little time in which to meet the obligation; there being thus more certainty of the draft's being paid. Drafts drawn in this way have *three days of grace* in addition to the time given. It is not deemed advisable to run the entries through the Bills Payable account when we accept a draft drawn on such short time; but when drawn on ten days or longer time, we call it a *Time-Draft*, and make the entry to the Bills Payable account.

INTEREST (OR USE OF MONEY).

144. Debit for all cash we pay out for interest on the notes which we have given to other parties.

146. Debit for amount deducted by the bank from the face of a note which we have had by them discounted.

148. Debit at the end of the year for the accrued interest to date on the interest-bearing notes we owe. (See 160 and 163.)

145. Credit for all cash we receive for interest on the notes which we have received from other parties.

147. Credit for discount allowed to us by other parties for paying our notes before due.

149. Credit, at the end of the year, for the accrued interest to date on the interest-bearing notes we hold against other parties. (See 155 and 158.)

150. *Directions for closing the Interest account at the end of the year:* 1st.—Find the difference between the two sides of this account. If the credit side be the larger, the amount the credit exceeds the debit is the *gain on Interest;*—we then write on the debit side of this account, in red ink, "To Loss & Gain" for amount gained. If the debit side be the larger, the amount the debit exceeds the credit is the *loss on Interest;*—we then write on the credit side of this account, in red ink, the amount lost, which in either case would make the account balance.

2nd.—Rule the closing lines and write the total amounts between the lines.

3rd.—If there be a gain, carry amount gained over to the "Loss & Gain account,"—writing on the credit side of that account, in black ink, "By Interest," for amount of the gain. If a loss, carry amount lost to the debit side,—writing "To Interest" for amount of the loss.

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151. EXPLANATION.—Interest is simply a term used for *the use of money.* When we pay for the use of money, we debit "Interest" for the use of the money which we *receive*, and credit "Cash" for the cash we *give* for the use of that money. (See 144 and 146.) When we are paid for the use of money which we have given, we debit "Cash" for the cash we *receive*, and credit "Interest" for the use of the money we *give.* (See 145 and 147.) Interest does not arise from *notes* only; for, when we have an account which is past due against a customer of ours, we charge him for interest. When this is done we debit the person and credit "Interest," as we, in reality, give to that person the use of the money for the length of time that his account is past due. When we allow an account which we are owing to go past due, we are sometimes obliged to pay for interest; we then debit "Interest" and credit the person to whom we owe the account,—as we, in reality, receive from the person the use of the money which should have been paid when his account was due, up to the present time.

152. DISCOUNT.—Discount is another term for *the use of money*; therefore, both being the same in effect it is not necessary to have an account for each, so we call interest and discount the same, and keep only one account on the Ledger, namely: "Interest."

153. When we are in need of money, we take some of the notes which we hold against other parties (Bills Receivable) to the bank and get them "discounted." If these notes are not drawing interest, the banker deducts from the face of the note a certain rate per cent. per annum for the time the note has yet to run before due, and hands us the balance in cash. This amount which he deducts from the face of the note is the "discount" or the amount we pay him for the use of that money which he hands us, for the unexpired time on the note. For example: If we hold a note for $100 which is made without interest and has yet 60 days to run before due, and we get it discounted in the bank, the banker, deducting $1 for discount, hands us $99; we then debit cash for $99 and interest for the discount—$1—and credit Bills Receivable for the full face of the note—$100. (See 125, also 490 and 512.)

154. When a person to whom we give a note allows us a certain amount for paying that note before due, we debit Bills Payable for the full face of the note; and credit "Cash" for the cash we pay, and "Interest" for the discount we are allowed.

Some business houses keep a separate account for Discount, but this is not necessary. (See also 74.)

INTEREST RECEIVABLE.

155. Debit, at the end of the year, for the accrued interest to date on all the interest bearing notes and time drafts we hold against other parties, *i.e.*, for the total interest due us to date on our Bills Receivable.	**156**. Credit when the accrued interest is paid which was charged on opposite side of this account.

157. *Directions for closing the Interest Receivable account at the end of the year:*

1st.– Find the difference between the two sides of this account, and then write on the credit side, in red ink, "By Balance" for that difference, which will make the account balance.

2nd.—Rule the closing lines and write the total amounts between the lines.

3rd.—Write on debit side of this account, in black ink, below the closing lines, "To Balance" for amount of this difference—which shows the balance of interest which is still due and receivable to us.

158. EXPLANATION.—At the end of each year, we compute the interest on all the interest-bearing Bills Receivable we have on hand, from the dates of such notes up to the end of the year; excepting those notes the dates of which extend back over one year; these notes we compute the interest on for only one year, because the interest has on these already been computed up to the first of the year and charged to this account. We then debit "Interest Receivable account" for the total amount of interest due us, and credit the "Interest account" proper, for the same amount. Thus it will at once be seen that the "Interest Receivable account" is an account indicating a *resource*,—being the amount of interest due us up to the end of the year;—therefore, it is never carried over to the "Loss & Gain account," the gain on interest being carried to the "Interest account," as above indicated.

159. The Interest Receivable and Interest Payable accounts are such "complicated affairs" that they are seldom used in business, unless one of the partners wishes to withdraw from the business, or unless they wish to take into the business a new partner, at which time they desire to know the exact worth of the firm; and in order to find this they must ascertain how much interest is due to the firm on the notes on hand, and how much interest is owing by the firm on the interest-bearing notes outstanding. The complication in these accounts arises in finding, at the time the interest is paid for, what portion of the interest to enter to Interest Receivable or Interest Payable, and what portion to the Interest proper account; and in making entries to so many accounts, when it would be entirely proper and much less work, to keep only one account instead of the three, namely, "Interest," and make the entry to that account not until *the interest is paid for.*

INTEREST PAYABLE.

161. Debit, when the accrued interest is paid, which was credited on the opposite side of this account.	**160.** Credit, at the end of the year, for the accrued interest to date on all the interest-bearing notes and time-drafts we owe, *i. e.*, for the total interest we owe to date on our Bills Payable.

162. *Directions for closing the Interest Payable account at the end of the year:*

1st.—Find the difference between the two sides of this account, and write on the debit side, in red ink, "To Balance" for amount of that difference, which will make the account balance.

2nd—Rule the closing lines and write the total amounts between the lines.

3rd.—Write on credit side of this account, in black ink, below the closing lines, "By Balance" for amount of this difference,—which difference is the balance of interest we owe for and is payable by us.

163. EXPLANATION.—At the end of each year, we compute the interest on all the interest-bearing Bills Payable we owe, from the dates of such notes up to the end of the year, with same exceptions as in 158. We then credit "Interest Payable account" for the total amount of such interest due, and debit the interest account proper for the same amount. It will

now be seen that the "Interest Payable account" indicates a *liability*, being the interest we owe for up to the end of the year—therefore is not carried to the "Loss & Gain account," but is allowed to stand on our books the same as the "Bills Payable account." The loss on interest we have to pay for is carried to the Interest account at the time we credit Interest Payable, as indicated above.

ACCOUNTS WITH PERSONS TO WHOM WE SELL GOODS OR LOAN MONEY.

164. Debit, at commencement of business, for amount they owe us.

165. Debit for all merchandise we sell to them on account.

166. Debit for all cash we loan to them on account, and take no note therefor.

167. Credit for all cash they pay us on account.

168. Credit for all merchandise they return to us on account.

169. Credit for all checks, bank drafts, sight drafts, money orders, etc., etc. (called cash), they give to us on account.

170. Credit for all drafts we draw on them at sight, on demand, or at one, three or five days' sight, they pay. (See 143.)

171. Credit for all notes they give to us on account, made by themselves payable to us. (See 108 and 113.)

172. Credit for all time drafts we draw on other parties they accept. (See 114, 115 and 142.)

173. EXPLANATION.—When we first enter into business, we open accounts with all persons who are owing us, and debit all such persons for the amounts they owe us. Whenever we sell a person goods and do not receive payment therefor, or whenever we loan money to a person and do not take a note for the amount of that loan, we *debit* the person; and when these persons to whom we sell the goods or loan the money pay us in any way, or give us a note, or accept a time draft which we draw on them, we *credit* them. (For remarks on balancing this account at the end of the year see 208 and 321.)

ACCOUNTS WITH PERSONS FROM WHOM WE BUY GOODS OR BORROW MONEY.

177. Debit for all cash we pay them on account.	**174**. Credit, at commencement of business, for amount we owe them.
178. Debit for all merchandise we return to them on account.	**175**. Credit for all merchandise we buy from them on account.
179. Debit for all checks, bank drafts, sight drafts, money orders, etc. (called cash), we give them on account.	**176**. Credit for all cash we bor row from them on account.
180. Debit for all drafts they draw on us at sight, on demand, or at one, three, or five days' sight, we pay. (Sec 143.)	
181. Debit for all notes we give them on account, made by us payable to them. (See 130 and 131.)	
182. Debit for all time drafts they draw on us we accept. (See 132, 133, and 142.)	

183. EXPLANATION.—When we commence business, we open accounts with all the persons we are owing, and credit all such persons for the amounts we are owing them. Whenever we buy goods, and do not pay the person from whom we buy, or whenever we borrow money, and do not give the person a note for the amount borrowed, we *credit* the person; and when we pay these persons from whom we bought the goods or borrowed the money, or give them a note, or accept a time draft which they draw on us, we *debit* them.

TAXES.

184. Debit for all cash we pay out for city, county, and other taxes.	

185. *Directions for closing the Taxes account at the end of the year:—*

1st.—Write on the credit side, in red ink, "By Inventory," for approximated value of unexpired Taxes.

2nd.—Find the difference between the two sides of this account, and write on the credit side, in red ink, "By Loss and Gain" for amount of this difference, which will make the account balance.

3rd.—Rule the closing lines, and write the total amounts between these lines.

4th.—Write on debit side of this account, in black ink, below the closing lines, "To Inventory" for this amount of unexpired Taxes, for beginning of the new year.

5th.—Write on the debit side of Loss and Gain account, in black ink, "To Taxes" for amount of loss as found in "2nd."

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186. EXPLANATION.—We debit Taxes for all cash we pay out for taxes on our property. At the end of the year we approximate the value of taxes still unexpired, and call that approximated value a Resource; consequently, we close the account as per above directions.

INSURANCE.

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187. Debit for all cash we pay out for insurance on goods and buildings.

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188. CLOSING AND EXPLANATION.—The directions for closing the Insurance account, and also the explanation, are exactly the same as in the Taxes account; consequently, for directions for closing and for explanation, we refer to 185 and 186, and while reading same, substitute "Premiums on Policies" where we find "Taxes." All business houses do not approximate the value of unexpired Taxes and "Premiums on Policies" at the end of the year, but call the whole amount a *loss* at once.

EXPENSE.

189. Debit for everything we buy to use ourselves and not sell again, as postage stamps, stationery, fuel, etc.

190. Debit for all cash we pay out and receive an equivalent in something we cannot sell again, as clerk hire, freight and express charges, insurance, rent, drayage, etc., etc.

191. Credit for everything we sell for which we debited Expense when the article was bought.

192. *Directions for closing the Expense account at the end of the year:—*

1st.—Write on the credit side, in red ink, "By Inventory" for value of the saleable articles we have on hand, for which we debited Expense when those articles were bought.

2nd.—Find the difference between the two sides of this account, and write on the credit side, in red ink, "By Loss & Gain" for that difference, which will make the account balance.

3rd.—Rule the closing lines and write the total amounts between the lines.

4th.—Bring down on the debit side, below the closing lines, in black ink, "To Inventory" the value of salable articles on hand, as found in "1st," for beginning of the new year.

5th.—Write on the debit side of Loss & Gain account, "To Expense" for amount of loss on this account, as found in "2nd" above.

193. EXPLANATION.—In reading over rules 189 and 190, it will at once be seen that no business can be conducted without an expense; it will also be seen that the Expense account is the "foe in the field" against which the business man has to contend. All transactions which result in a *loss* to us may be carried into the Expense account, or the account may be divided into as many accounts as we wish to keep to represent the losses occasioned in our business.

194. As it is a matter of gratification to the business man to have a more explicit and comprehensive statement of the expenses at the end of the year, it becomes necessary for him to classify his expenses by opening

accounts for the different items of expense; and whenever an amount is expended which would otherwise be debited to Expense, it is debited instead to the account to which it belongs. For example: If the business man wishes to know how much he expends during the year for clerk-hire, he keeps an account called "Salaries," and debits that account, instead of Expense, whenever anything is expended for clerk-hire; or, if he wishes to know how much is expended for freight and express charges, fuel, rent, drayage, insurance, advertising, travelling expenses, etc., etc., he opens an account with each, and whenever amounts are expended which would otherwise be debited to Expense, they are, instead, debited to the respective accounts to which they belong. When we thus divide the account we debit Expense account for all such items of expense as do not come under any of the accounts thus opened.

195. When we take an inventory at the end of the year we sometimes take an account, or find the value of the unused salable expense articles we have on hand, *i. e.*, articles that were debited to Expense when bought, such as fuel, postage stamps, etc.,—we then close the account according to directions on this account. When we do not take an inventory in this way we close the account simply according to "2nd, 3rd and 5th," of 192.

196. All accounts we open in the Ledger, in which to debit articles we buy to consume in the business, *i. e.*, to use ourselves and not sell again, we close at the end of the year in the same manner in which the Fuel account is closed. (See 200.) These articles must, however, be such as would be of value to anyone else, and consequently, salable articles.

197. All accounts we open in the Ledger, in which to debit amounts that are at once and in entirety a "dead loss," we close at the end of the year in the same manner in which the Salaries account is closed (see 202), excepting that we write on the Loss & Gain account the name of the account on which such loss was made.

FUEL.

198. Debit for all fuel we buy to consume in our stoves and furnaces.	**199.** Credit for all fuel we sell.

200. *Directions for closing the Fuel account at the end of the year:*

1st.—Write on the credit side, in red ink, "By Inventory" for value of fuel remaining on hand unused.

2nd.—Find the difference between the two sides of this account, and write on the credit side, in red ink, "By Loss & Gain" for this difference,

which will make the account balance. The difference thus found will be the amount of fuel we have consumed.

3rd.—Rule the closing lines and write the total amounts between the lines.

4th.—Write on the debit side, in black ink, below the closing lines, "To Inventory" for the amount of fuel we have on hand for the beginning of the new year.

5th.—Write on the debit side of Loss & Gain account, in black ink, "To Fuel" for amount lost on this account.

SALARIES (OR LABOUR).

201. Debit for amount we allow or pay our employés for services.

202. *Directions for closing the Salaries account at the end of the year:*

1st.—If there are any credits on this account, find the difference between the two sides and write on the credit side, in red ink, "By Loss & Gain" for the difference. If there are no credits, simply find the total amount of the debit side, and write on the credit side, in red ink, "By Loss & Gain" for such amount.

2nd.—Rule the closing lines and write the total amounts between the lines.

3rd.—Write on the debit side of Loss & Gain account, in black ink, "To Salaries" for amount lost on this account, as found in "1st" above.

203. EXPLANATION.—When we pay our clerks, book-keepers, etc., weekly, semi-monthly or monthly, the total amounts due them, it is not necessary to keep an account with each, but debit the amount paid them directly to the Salaries account.

204. If we do not pay them regularly the amounts due them, but allow them to draw from their salary at pleasure, we then open an account for each of our employés, debiting them whenever they draw any money, or take any merchandise for their private use; and crediting them at the end of each month for their salary for the month. When we do this, on the last day of the month we enter in the Journal "Salaries Dr. to Sundries," and under this heading, we enter the names of each of our employés, giving each credit for his salary; and after we have the names and amounts all entered, we find the total of these amounts and debit Salaries account for such total amount in one entry. If the members of

the firm allow themselves a salary from which to draw, their names are entered with the employés and their private accounts treated the same as the accounts with the employés. The accounts thus formed with our employés are the same as any personal accounts we owe, unless the employé overdraws his account, and then, of course, "the shoe is on the other foot," being then the same as a personal account owing us.

FREIGHT AND EXPRESS.

205. Debit for all cash we pay out for freight and express charges.	**206**. Credit for all cash we receive from Railroad or Express companies as rebate or overcharge on freight or express.

207. CLOSING.—The Freight & Express account is closed the same as the Salaries account. (See 202.) Some firms however, carry the amount lost on freight and express to the Merchandise account, instead of to the Loss & Gain account, at the end of the year, reasoning thus: That the merchandise really costs them the price of the goods *plus the freight*. This is, in fact the case; but the usual custom in practice is to carry the Freight & Express account over to Loss & Gain with the other accounts on which we lose or gain.

208. EXPLANATION.—Some Railroad companies allow those business houses who have large quantities of freight shipped over their lines a "rebate," or "drawback." This rebate they usually settle monthly, and when they pay it, we credit Freight & Express account; unless, we open an account with the Railroad company in which to charge such overcharges; we then, of course, credit the Railroad company's account when they settle for the charges we have against them. These Railroad companies have (they say) a certain rate from which they must not deviate; consequently, all their freight bills must be made (out for the same class) at the same rate per 100 lbs.; yet they must recognise the excess of patronage in an extensive establishment over a small house in charges for freight, in the same manner as a wholesale merchant does one customer over another, and to do this, the freight company must resort to "rebate."

COLLECTION AND EXCHANGE.

209. Debit for all cash we pay out for collection of drafts, notes and checks; and for exchange on bank drafts, post-office orders, etc.	**210**. Credit for rebate on exchange, if any.

211. CLOSING.—The Collection & Exchange account is closed at the end of the year the same as the Salaries account. (See 202.)

212. EXPLANATION.—Some banks allow their customers who purchase large quantities of exchange a *rebate*, for the same reason that the railroad companies allow their patrons a rebate on freight. (See 208.) When they allow us a rebate, and pay or give us credit for same, we then credit Collection & Exchange. If the bank simply gives us credit in our bank book, which they usually do, we debit Cash and credit Collection & Exchange; and then enter on the stub of our check book the amount thus credited to us, as though it had been a deposit made by us, consequently increasing our deposit in the bank that amount.

TRAVELLING EXPENSES.

213. Debit for amount paid to our travelling agents, or expended by ourselves for travelling expenses.	

214. CLOSING.—The Travelling Expenses account at the end of the year is closed the same as the Salaries account. (See 202.)

215. EXPLANATION.—This account is used only in a wholesale house where they employ travelling agents to sell their goods. There are many ways of treating the Travelling Expenses account, principal among which are the following methods:

216. *First Method.*—Some business houses employ travelling agents, paying them a regular salary and telling them to go out and sell their goods, and they will pay *all their expenses, whatever they may be.* When this is done the expenses may be charged directly to the Travelling Expenses account; or, an "Agent account" may be opened for each of the travelling agents, and when an amount is reported expended for expenses

by an agent, the amount may be charged to this Agent account,—and at the end of each month, or at the end of the year, as we may prefer, this "Agent account" may be balanced by writing on the credit side, in red ink, "By Travelling Expenses" for the total amount of same, and carrying this amount over to the debit side of Travelling Expenses account,—writing there, in black ink, the name of the agent by whom this amount was expended. When we keep an "Agent account" in this way, it is simply as a matter of satisfaction to us to know how much is expended by each agent.

217. *Second Method.*—Some business houses pay their travelling agents a regular salary, and allow them besides a certain amount per day, per month, or per year, for travelling expenses. When this is done, an "Agent account" may be opened in the Ledger for each agent, and these accounts debited whenever any money is drawn for travelling expenses; then, at the end of each month, an entry may be made on the Journal thus:—"Travelling Expenses Dr. to Sundries," and under this heading enter the names of all our travelling agents, adding "Agent account" after each name, crediting to the respective Agent accounts the amounts allowed them for expenses. The difference may then be found between the two sides of the respective "Agent accounts," the Agent account balanced the same as in first method; excepting, that this difference, instead of being carried to the Travelling Expenses account, is carried to the *personal account of the agent, i.e.*, the account upon which is entered his regular salary,—debiting the personal account of the agent, if he has drawn more than allowed by the firm for expenses, or crediting it if he has drawn less.

218. *Third Method.*—When the travelling agent is allowed a certain amount per day, per month, or per year, for travelling expenses, instead of opening an "Agent account," as in Second Method, we may, when an amount is drawn for expenses, charge the amount directly to the personal account of the agent,—thus, at the end of each month, make an entry on the Journal the same as described in Second Method, excepting, instead of adding "Agent account" after each name, and crediting the amounts to the Agent accounts, we credit the amounts allowed for travelling expenses directly to the *personal accounts of the agents.*

219. *Fourth Method.*—Some houses, in addition to a regular salary and a certain amount for travelling expenses, pay their travelling agents a certain percentage commission on the sales they make—sometimes on the sales from the beginning, and sometimes not until their sales have reached a certain amount. This is partly done to insure extra efforts on

the part of the agent to make large sales, and partly to show their appreciation of his hard work. When this is done, the commission thus allowed may be charged to any one of the three following accounts, viz.: Agents' Commission, Merchandise, or Travelling Expenses, and credited either to the agent's personal account or to his "Agent account." The better way, perhaps, is to open an "Agents' Commission account" in the Ledger, and at the end of each month make an entry on the Journal thus: "Agents' Commission Dr. to Sundries," and under this heading enter the names of all the agents to whom we pay commission on sales, crediting either their "Agent accounts" or their personal accounts for the commission due them, and debiting the "Agents' Commission account" for the total amount.

220. *Fifth Method.*—There are a few business houses who do not pay their agents a regular salary, but simply pay them a certain per cent. commission on the sales they make, allowing the agents to defray their own expenses. When this is done, the commission thus allowed may be charged to any one of the three accounts as described in Fourth Method, and credited at the end of each month directly to the *agent's personal account.* This is a method seldom used in business, as there are but few agents who are willing to engage with a house on such terms.

221. Thus it will be seen that the "Agent accounts" are always balanced at the end of each month, and carried either into the Travelling Expenses account or into the *personal account* of the agent direct,—consequently, these Agent accounts are simply transient, and remain open only a month at a time. However, there are a few exceptions to this rule, in which the accounts are closed only at the end of the year—these exceptions occurring usually under the First Method. When the "Agent accounts" are closed only at the end of the year, they are then carried into the Travelling Expenses account, and show the amount expended by each agent for the entire year in one entry.

222. The travelling agents' personal accounts are of course credited for their salaries at the end of each month, the same as the accounts with our other employés, and thereafter treated the same as any other personal account. (See 204.)

BRANCH HOUSES.

223. Debit for all merchandise we send to them from our stock of goods.	**228**. Credit for all merchandise we buy from them on account.

224. Debit for all merchandise we buy and have sent direct to them.

225. Debit for all merchandise they buy on account for which we are to pay.

226. Debit for all cash or other values we give them.

227. Debit, at the end of the year, for amount reported as the *net gain* in the business transacted by them during the year.

229. Credit for all merchandise they return to us after they have bought it.

230. Credit for all cash they pay us on account.

231. Credit for all notes, acceptances, etc., they turn over to us.

232. Credit, at the end of the year, for amount reported as the *net loss* in the business transacted by them during the year.

OUR ACCOUNTS WITH THEM.

233. EXPLANATION.—The accounts with our Branch Houses are kept on the same principle as the "Accounts with persons to whom we Sell Goods" (See 164 to 173), consequently are neither more nor less on our books than simply *personal accounts*. When we close our books at the end of the year, we allow these accounts to stand on the Ledger untouched, calling the accounts Resources.

234. We debit our Branch Houses whenever we send them any goods from our stock. Some houses charge these goods at their *cost*, and others charge them at a profit. When we buy goods on account and receive bills therefor, some of which goods were bought for our Branch Houses, we mark on such bills the names of the Branch Houses to which they belong. When we enter our bills, we can adopt either one or the other of two methods, viz.: 1st.—(1) To assort the bills, getting those bills together which are for goods for our own stock, and debiting our merchandise account for same, crediting each of the parties from whom we buy, then getting those together which are for the different Branch Houses, and debiting the respective Branch Houses for the bills belonging to each and crediting the parties from whom we buy; or (2) to have a "Merchandise" column and a column for each of our Branch Houses, and carry out the amounts in the columns to the debit of the respective accounts to which they belong, crediting the parties from whom we buy for such amounts—the respective Branch Houses accounts and the Merchandise account being debited only at the end of the month for the total purchases for each for the month. The last named is the plan adopted by the larger houses—where they have a book ruled with these extra columns, which

book they use exclusively for entering the bills of their purchases. 2nd. —The second method is to debit our Merchandise account for all the goods we buy, whether for our own stock or for our Branch Houses, crediting the parties from whom we buy; and then to debit the Branch Houses and credit Merchandise for such goods as were bought for them. This method requires much more work than the first, because we are obliged to copy on our Sales Books the items on the bills which were sent to the Branch Houses. It is the general custom of the Parent House to assume all the liabilities of the Branch Houses, consequently, to pay all the bills contracted by them.

235. We credit our Branch Houses whenever we get goods from them with which to replenish our stock on some lines in which we had become short; and for all the cash they send to us on account; and for all notes, acceptances, etc., which they have received from their customers and turn over to us.

236. At the end of the year, when our Branch Houses report the net gain or net loss by each, we debit or credit each of the respective Branch Houses accounts, and debit or credit our Loss & Gain account for the net loss or net gain by each reported. IF A NET GAIN.—If a Branch House reports a net gain in the business, we debit the Branch House account and credit our Loss & Gain account for such gain, writing on the credit side of the Loss & Gain account, as an explanation, the name of the Branch House upon which the gain was made. Having made this entry, the difference between the two sides of our account with the Branch House should show the present worth of that house or the amount they owe us, which amount should just agree with the difference between their total Liabilities and their total Resources (excluding their account with us). IF A NET LOSS.—If the Branch House reports a net loss in the business, we credit the Branch House account and debit our Loss & Gain account for such loss, writing on the debit side of the Loss & Gain account, as an explanation, the name of the Branch House upon which the loss was made. Having made this entry, the difference between the two sides of the Branch House account should show the present worth of that house, or the amount they ought now to have credited to our account on their Ledger, which amount should just agree with the difference between their total Liabilities and their total Resources (excluding their account with us). If the Branch Houses keep a Stock account, in addition to the Personal accounts with the Parent House, that, of course, must too be excluded from the Resources and Liabilities and included in the remarks "their account with us" heretofore used.

HOW THEIR BOOKS ARE KEPT.

237. Our Branch Houses each keep a full set of books in the same manner as we keep our books, and precisely the same as books are kept in any business, treating our account on their Ledger the same as they would any other accounts with persons from whom they bought goods on account, with the following two exceptions, viz.: 1st (1), instead of crediting parties from whom they buy goods on account, they turn the bills over to us to pay, debiting their Merchandise account for the same and crediting their account with *us:* or (2) they can debit their Merchandise account and credit the parties; afterward, when they turn over the bills to us to pay, charge the parties and credit us, which amounts to the same but makes more work. It is not necessary for the Branch Houses to submit the bills to the Parent House, but simply to make an itemized statement of the debts contracted with the different persons, and from this statement the Parent House can charge the Branch House and credit the different parties.

238. When the Branch Houses are first opened, they open their books in the same way that books are opened in any store or business, excepting that they credit the Parent House for the *net investment;* and at the end of the year the proceedings for closing the books are the same as in any other business—finally debiting or crediting the Parent House for the net loss or the net gain in the business.

239. Either of two methods may be adopted by the Branch Houses in keeping the accounts with the Parent House, viz.: 1st.—To each open two accounts with the Parent House—a Stock account and a Personal account—debiting or crediting the Stock account at the end of the year for the net loss or the net gain, as the case may be; and treating the Personal account as described in 236. 2nd.—To keep only one account with the Parent House, namely, a Personal account,—entering all transactions with the Parent House during the year into that account, and at the end of the year debiting or crediting that account for the net loss or the net gain. If a Stock account is opened with the Parent House when the Branch first commences business, there can be no entry to this account, for everything belongs to the Parent House, and must necessarily be credited to the Personal account of that House, and not to its Stock account; but at the end of the year the net loss or net gain may be carried to the Stock account, and that would be the only item that would appear on that account;—therefore, it is deemed the better method to keep only a Personal account with the Parent House.

240. The Branch Houses render statements to us of all their expenses their purchases, their sales, etc., daily, weekly, or monthly, according to arrangement; and these statements are filed away by us simply as memorandas, no entry being made on our books, unless it be on a record book, which is not often done, as these reports are simply ma le out for our own satisfaction, in order that we may know the progress of the business in the different Branches. These Branch Houses at the end of the year each report to the Parent House the net gain or net loss in the business, as the case may be. (See 236.)

SHIPPING BUSINESS.

241. That business in which we engage for the purpose of buying goods and shipping them to others to be sold—the persons to whom we ship the goods charging us for the selling of same a certain percentage on the sales—is called "Shipping Business." When we first enter into business, the books are opened the same as in a general merchandise business; the books are the same as those used in any other business, with the exception of a book called "The Shipping Ledger," the use of which will be hereinafter described. The principal books are the Shipping Ledger, the Journal, the Cash Book, and the Ledger. A Merchandise account is kept in the Ledger, which is charged for all merchandise we buy, and credited for all merchandise we sell.

SHIPMENTS.

242. The Shipping Ledger.—The Shipping Ledger is a book used simply as a record book, in which to make a record of the goods we place in the hands of others to be sold. It is used as a book of original entry *i.e.*, when a shipment is made it is at once recorded in this book. A book ruled in the common Ledger form is suitable for the Shipping Ledger. When we make a shipment, an account is opened in this book with the person to whom we ship. On the debit side is entered first the date, then the items, then *the cost price of the goods*, and under this is entered the charges which we pay for drayage, etc. After a shipment has been thus recorded, the account here opened is allowed to stand until the party to whom we shipped the goods renders to us an Account-Sales; we then enter on the credit side, opposite the charge, the *net proceeds* of the sales thus reported; after which, we debit the person and credit Merchandise in the Journal, simply entering the person's name, the amount, and the Shipping Ledger page upon which may be found the record of the sale

in detail. An account is then opened in the general Ledger for this person; the amount thus charged to him in the Journal is posted to the debit side of his account here opened, and this account credited when remittance is made for the net proceeds. An extra column may be kept in the Journal in which to enter the merchandise sales, which will render it unnecessary to post the Merchandise oftener than once a month,—the sales we make directly from our store being entered in this column, as well as the net proceeds of sales reported by the persons to whom we ship. The object of extending the cost of the goods in the Shipping Ledger, when we make a shipment, is in order that we may see whether we lose or gain on the shipment, and thus ascertain whether it pays to ship goods to that person. On the debit side of this Ledger is found the cost of the goods, and on the credit is found what we realized for them—the difference between the two sides being the amount lost or gained. The goods charged to the different persons in the Shipping Ledger *belong to us* until reported sold; consequently, a real charge is not made to the person until the sale is reported. Some shipping houses keep both a Sales Book and a Shipping Ledger, entering the shipment first on the Sales Book and afterward copying it into the Shipping Ledger; but as it is unnecessary work to thus enter the transaction twice, the Sales Book is dispensed with and the transaction is at once recorded in the Shipping Ledger. There are several forms for the Shipping Ledger in use; but, as heretofore stated, a book ruled in common Ledger form may be used; however, it will be seen that two extra columns—one on the debit side and one on the credit, in which to make a memorandum of the amount lost or the amount gained on the shipments—are very convenient. By having these two extra columns, we may at any time ascertain how much we have gained or lost on the total shipments made to any person, by simply adding the two columns, "Losses" and "Gains," on his shipment account, and finding the difference between the sums total. In order that the book described may be more fully understood, a form for the same will here be given.

243. FORM FOR SHIPPING LEDGER.

Date.	Shipments. Explanation in Items.	Cost Price.	Cost Amount.	Losses on Shipments.	Date.	Sales Reported.	Jr. Pg.	Net Proceeds.	Gains on Shipm'ts

244. At the end of the year we proceed with the closing of our books in the Shipping Business the same as in a general merchandise business, excepting, when the inventory is taken, the goods we have belonging to us consist of not only those which we have in our store, but also those which we have charged to the different parties in our Shipping Ledger, and which have not yet been reported sold; therefore, after we have found the value of the goods we have in the store, we must go through our Shipping Ledger, and add to the inventory the value of the goods there found still unsold; when we have done this our inventory is complete, and we are prepared to close the Merchandise, which is done in the manner described in 71.

245. *Another Method.*—There is another method of treating shipments, which is very little in use; the reason for its not being in use will be readily understood after having read the following description of the method:—Charge the person to whom we ship the goods a certain amount, which we think will be about what we will realize for the sale of the goods; then, when this person renders to us an Account-Sales of the consignment, debit or credit his account for the difference between the amount we charged him when we shipped the goods and the amount of the net proceeds as shown in the Account-Sales. If the net proceeds be *less* than the amount we had charged to him, debit Merchandise and credit his account for the difference; if *more*, debit his account and credit Merchandise for the difference. When this method is adopted, the person to whom we ship the goods is charged at the time the goods are shipped, the same as though we had sold him the goods "out and out;" thus *an actual sale* is recorded in the books when, in fact, it is only *an anticipated sale*—hence, a false statement. According to this method, when a shipping merchant is financially embarrassed, and wants, for the satisfaction of his creditors, to make a "big showing" on his books, if so disposed he may charge the goods, when shipped, at exorbitant prices, and by so doing show (on consignments not yet reported sold) large amounts owing to him by parties to whom he has sold (?) goods. There are, of course, shipping merchants who are not financially embarrassed, who have no desire that their books should represent them worth more than they really are, and who do not charge the goode at exorbitant prices; yet they keep the accounts with the persons to whom they ship according to this method. But to any reasonable mind it will at once be seen that an untrue statement is made in their books; for the books show, in these accounts, a part of the resources of the firm to be *personal accounts owing to them* which should in reality be a showing of *merchandise belonging to the firm.*

COMMISSION BUSINESS.

216. That business in which we engage for the purpose of selling goods belonging to others—for the selling of which goods we are to charge a certain percentage on the sales—is called "Commission Business." The business of a commission merchant consists of disposing of the goods sent to him by a shipping merchant; hence, in a strictly commission business none of the goods which the merchant has in his store belong to him; therefore he can have no Merchandise account in his Ledger—the accounts representing the gains in his business being "Commission," "Storage," "Labour," etc. The books used principally in this business are: Receiving Book, Sales Book, Consignment Book, Journal, Cash Book and Ledger. The Journal, Cash Book and Ledger are of the same form as those used in any other business. The use of the Receiving Book, the Sales Book and the Consignment Book will be described under heading of "Receipts." It will be seen in the two different kinds of business, Shipping and Commission, that the one is directly the opposite from the other—the shipping merchant being constantly sending out goods, while the commission merchant is constantly receiving. Therefore, while the Shipping Business is described under heading of "Shipments," it is thought best to describe the Commission Business under heading of "Receipts."

RECEIPTS.

217. THE RECEIVING BOOK.—The Receiving Book is a book upon which a record of the goods received to be sold on commission is first made. A common Journal ruling is suitable for this book. When goods are received to be sold on commission, we give the person from whom we receive the goods a *consignment number* on this book, and under or opposite this is entered, first the date, then the person's name and address, and then the description of articles received; after which, as a memorandum, the charges paid for freight, drayage, etc., together with the name of the Railroad or Steamboat Co. from whom received. As soon as the goods are received we stencil on each package the consignment number given them in this book, and they are therefore known, while in the store and when sales are made from them, by that consignment number, and not by the name of the person to whom they belong. There are many conveniences which arise from this "consignment-number method," a few of which being: the packages are marked in this manner much quicker than they could be if the owner's name was used instead; when any of the goods are

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sold it is much the quicker way to write a Consignment No. on the Sales Book than to write the owner's name; the salesman may not know to whom the goods belonged, the owner being simply identified by the Consignment No.

248. The Sales Book.—The Sales Book is a small book (ruled in common Journal form) used in which to record the on-account sales. When a sale is made on account, the person to whom we sell is charged in this book in the same manner as though the goods belonged to us, excepting that after having recorded the time upon which the goods were sold (30 days, 60 days, or whatever it may be), we add the Consignment No. to which they belonged, in order that we may know to whom the sale must be credited. From this book a sale thus recorded is posted to the debit of the person's account to whom we sold the goods on the Ledger, and to the credit of the owner (the person from whom we received the goods) on the Consignment Book.

249. The Consignment Book.—The Consignment Book is a book in which is kept the progressive sales accounts with the persons from whom we receive goods to be sold on commission. When the consignment is first received, we open an account with the person from whom we receive the goods in this book, entering on the debit side first the date, then the Consignment No. given by the Receiving Book, then the name of the owner of the consignment, and, lastly, the number and description of the articles. The entry made thus far on this book is simply a memorandum of the goods received from the person, and as such it ever after remains. The further use of this book is described as follows, viz.: To the debit side is posted, from the Cash Book, all the *charges* we pay on the consignment for freight, drayage, etc.; and to the credit side is posted, from the Cash Book and the Sales Book, all the *sales*. When the goods belonging to a consignment have all been sold, we enter on the debit side of the Consignment Book all of *our charges*, such as Insurance, Storage, Cooperage, Labour, Commission or whatever they may be; after which we find the difference between the total charges and the total sales, which difference is the *net proceeds*. We then close up this consignment and transfer the net proceeds to the Ledger, which is done by entering on the Consignment Book, under the charges, "To Net Proceeds" for the amount, which will make the consignment account balance; then, by opening an account in the Ledger with the person from whom we receive the consignment, and crediting this account for the net proceeds—the account here opened being debited when we make remittance for same. Our charges for commission, etc., heretofore referred to, may be at once entered on the Consignment

Book and posted directly from this book to the credit of those accounts on the Ledger. As soon as a consignment is "closed out," *i. e.*, the goods all sold, an Account-Sales must be made out and rendered to the consignor, which Account-Sales is an exact copy of his account on the Consignment Book.

The person who ships the goods is called the consignor, and the person to whom the goods are consigned or shipped, is called the consignee.

The consignee often sells on time unless he has advice from the consignor to the effect that he must sell for cash. If the consignee sells on time it is understood that he (the consignee) takes all risks in collecting the account of the person to whom he sells. After the goods in a consignment have all been sold and an Account-Sales made out, if there were any time sales made the Account-Sales is then averaged, the date found upon which the net proceeds becomes due, and a note sent or draft accepted for the amount.

The consignor often makes sight drafts on the consignee "in round amounts," on consignments not yet entirely sold out; these drafts are paid by the consignee, and of course charged to this account *in the Ledger*.

The commission merchant often receives several consignments from the same person. Although but one account is opened in the Ledger, a separate account must be opened for each consignment in the Consignment Book, and each consignment has a different number; yet each of these Consignment Nos. are identified as belonging to the same person. As these different consignments are closed out, the net proceeds of each are carried to the same account in the Ledger. The reason for keeping each consignment separate is, because the consignor wishes to know upon each consignment how much is lost or gained.

250. Closing Commission Books at the End of the Year.—Unlike any other business, no Merchandise account being kept, the proceedings for closing the books in the commission business differ only in this one particular, viz.: no inventory of merchandise is taken, for the reason that the goods in our store do not belong to us. However, an inventory is made of the store and office fixtures, the insurance unexpired, etc., after which a Loss & Gain account is opened, and all the accounts upon which we lose or gain are closed and carried into this account the same as in any other business. At the end of the year there are consignments which have not yet been entirely sold out, and upon which there are, of course, gains to us for commission, etc.;—all these charges thus due to us for commission on sales already made, insurance, storage, etc., may be, at the end of the year, debited to the consignments and credited to the different accounts.

representing same. But this way of doing necessitates the making of additional charges when the consignments are closed out; therefore, it is the custom to allow these consignments to remain untouched until then, for the reason that by doing otherwise it makes of them "complicated affairs" similar to that described under "Interest Receivable," 159.

The commission merchant usually procures an insurance policy of a sufficient amount "to cover any goods he may at any time have in his store." When such a policy is procured, he opens an account in his Ledger and styles it "Insurance receivable," or some similar title, and to this account he debits the amount paid for premium on that policy. This is called a resource; for to the consignor he charges a certain percentage for insurance, according to the time the goods remain in his store, this Insurance Receivable account receiving credit for such amount. At the end of the year, as heretofore stated, the value of the unexpired premium is approximated; after which the Insurance Receivable account is closed the same as described in 188. There are some consignors who will not permit us to charge for "Insurance;" but an arrangement is usually resorted to by the consignee through which he can, in spite of the consignor's protestations, get in all his petty charges, such as insurance, "ratage," risks on on-account sales, etc., by charging a certain percentage under "Risks," "Charges," or some similar title.

251. TRIAL BALANCE.—In taking the trial-balance according to this method, we must not only take the accounts in the Ledger and the cash on hand as shown by the Cash Book; but also, find the difference between the two sides of all the unclosed consignment accounts in the Consignment Book, and include all these accounts as well as the trial-balance.

252. There are several different methods of keeping these consignment accounts, but the one here adopted is thought to be the best; for there is no method by which the work can be lessened—less writing done, less entries made—unless it be a business in which they deal mostly in petty consignments, *i. e.*, small consignments which they usually dispose of at one sale; then the system and form described in 256 and 257 is recommended.

253. *Another Method.*—Proceed according to method described in 247 to 250 inclusive, with the following exceptions, viz.: 1st.—When goods are received and charges for freight and drayage paid, instead of posting these charges directly to the consignor's account in the Consignment Book, an extra column is kept in the Cash Book for "Charges." Into this column are extended all such charges, and at the end of the day, week or month, whenever the Cash Book is closed, the total of this column is

posted to the debit side of a "Charges" account in the Ledger—this account receiving credit for such charges when the consignments are closed out, as will be hereinafter described. The difference between the two sides of this account always shows the amounts owing to us for freight and cartage charges on consignments not yet closed out, and, therefore, is a *resource*. 2nd.—When sales are made from a consignment on account, in addition to crediting the owner on the Consignment Book, a "Merchandise" column is kept in the Sales Book, and all sales are extended into this column; at the end of each month the total of this column is found, and that amount is posted to the credit of a "Merchandise" account in the Ledger. An extra column is also kept on the debit side of the Cash Book for Merchandise, in which to extend all of the cash sales of the consignments; and, as in the Sales Book, in addition to crediting the consignments for such sales, the amounts of each are extended into this column, the total of same carried forward until the end of the month, and then posted to the credit of Merchandise in the Ledger. 3rd.—When a consignment is sold out, the total amount of the sales of that consignment is posted to the debit of the Merchandise account in the Ledger; then all the charges, such as freight, drayage, labour, commission, etc., are entered on the debit side of the Consignment Book. The difference between the total of these charges and the total sales is now found, and that difference, being the net proceeds of the sales, is posted to the credit of the consignor's account in the Ledger; after which, the "Charges" account is credited for the freight and drayage charges, and each of our gain accounts, such as Commission, Labour, Storage, etc., is credited for the amount here entered. The difference between the two sides of the Merchandise account, as here used, is a *liability*,—being the amount we owe on consignments not yet closed out. At the end of each month, when we take a trial-balance, we must go through the Consignment Book, and on such consignments as have not yet been closed out, find the total sales of each, and include all such amounts on the *debit* side of the trial-balance—these being amounts we owe to consignors for goods we have sold and not yet rendered Account-Sales for, but which have been credited to Merchandise in the Sales Book. The total of these amounts thus taken from the Commission Book should just agree with the difference between the two sides of the Merchandise account in the Ledger.

The following forms will illustrate the different styles of rulings used by different commission merchants.

254. CONSIGNMENT BOOK.

CONSIGNMENT.											
Date.	Cons't No.	Description.						Date.	To whom sold.		
		Account of									
		C. B. or L Fg.	Charges :								
			Freight,								
			Drayage,								
			Storage,								
			Insurance,								
			Commission,								
			Net Proceeds,								

255. CONSIGNMENT BOOK.

RECEIPTS.							
Date.	No. of Cons't.	Owner.	ARTICLES.		CHARGES.		
			No. of	Description.	C. B or L. Pg.	Description.	Amount
						Freight, Cartage, Storage, Cooperage, Labour, Insurance, Commission, Net Proceeds.	

256. CONSIGNMENT BOOK.

PERSONAL DEBIT.				CONSIGNMENT.			
Date.	To Cash.	C. B. Folio.	Amount,	Date.	Cons't No.	Owner, Address and Articles.	Gross.

FORM NO. 1.

SALES.							
Quantity.	Price.	Folio S.B. or C. B.	Time.	Gross Weight.	Tare.	Net Weight.	Amount.

FORM NO. 2.

SALES.						
Date of Sale	ARTICLES.			Price.	Amount.	Remarks.
	No. of	Description.	S.B or C. B. Pg.			

FORM NO. 3.

CREDIT.				CONSIGNMENT DEBIT.					PERSONAL CREDIT.
				CHARGES.					
Tare.	Net W'ght.	Price.	Sales Amount.	Freight.	Drayage.	Sundry.	Commission.	Total Charges.	Net Proceeds.

257. When Form No. 3, above shown, is used, the following described method is adopted, viz.: The books are kept by Single Entry. No record is made on this Consignment Book until the goods belonging to a consignment are all sold; then the full record is here made, consisting of the date upon which the consignment was closed out, the Consignment No., the owner's name, address, and articles received, with weight, price realized, and the total amount for which sold, which amount is the total "Consignment Credit." Then the charges for freight and drayage are transferred from the Receiving Book into the columns here representing same, and *our charges* are made in the "Sundry" and "Commission" columns; the total charges are now extended into the column representing same, which amount is the total "Consignment Debit." The difference is next found between the total charges and the total sales, that difference is extended into the "Net Proceeds" column to the *personal credit* of the consignor, and when remittance is made for the net proceeds thus credited, the consignor is debited under the head of "Personal Debit." So this book is at once a Consignment Book and a Ledger in one; *i. e.*, instead of an account being opened with the consignor in the Ledger, his account appears here in the "Personal Debit" and "Personal Credit" columns. By adopting this method the totals of our "Sundry" and "Commission" columns may be found, at the end of each month, and the amounts thus gained posted to the credit of those accounts in the general Ledger. When we are receiving several consignments from the same person, a page may be reserved for that person and all his consignments entered thereon; and whenever he makes drafts on us "in round amounts" on his consignment account, he is charged under the "Personal Debit" for such of those drafts as we pay.

258. When the method described in 247 to 251 is adopted, either of the forms 254 or 255 may be used. When an amount is posted to the credit side of the Consignment Book, the Sales Book page or Cash Book page upon which may be found the original entry of the sale is here inserted; and when an amount is posted to the debit side of the Consignment Book, the Cash Book page upon which may be found the original entry for the freight and cartage charges is inserted. This same "folio" column is used in which to enter the Ledger page to which we post the credits for our charges for Commission, Insurance, etc.; and also the Ledger page to which is posted the net proceeds,—it being thought unnecessary to make an entry on any other book before transferring these amounts to the Ledger, as the entry is perfectly clear to us and does not require any elaboration by way of a "Journal entry" before going into the Ledger.

259. It will be seen, in Form No. 1, that no column is made on the "Sales" side in which to write the description of the articles—the description being already given under "Consignment;" thus all that is required under "Sales" is simply a column for the *quantity* of the articles sold. In Form No. 2 it will be seen that no column is made on the "Sales" side in which to write the name of the person to whom sold,—it being thought of no concern to the consignor to whom we sell the goods, as we ourselves take all risk in the collection of the accounts,—and, further, we do not want him to know who our customers are. An improvement might be made on both forms by consolidating the two—having no column for the person to whom sold, and having simply a column for the *quantity*—not the full description—of the articles; with also a column in which to make a memorandum of goods sold on time, as shown in Form No. 1.

260. Shipping merchants very seldom do exclusively a shipping business, but carry on, in connection with same, a merchandise, and sometimes a little commission business.

Commission merchants very seldom do exclusively a commission business, but, in connection with the same, buy and sell goods "out and out," and occasionally do a little shipping; however, this fact of their doing "a little outside business," as they call it, they do not advertise to the persons who ship them goods to be sold on commission,—in fact, they sometimes crack, if not break, the ninth commandment, when asked by a commission customer of theirs whether or not they handle any goods of their own. The person who is shipping goods to be sold on commission prefers to not send the goods to a commission merchant who transacts a merchandise business, and handles the same kind and class of goods; for it is supposed that "human nature" will assert herself, and prompt the merchant to "push the sale of his own goods in preference to all others," and thereby delay the sale of the commission goods. It often occurs, however, that the commission merchant has an order for a certain kind of goods of which he has not a sufficient quantity remaining in a consignment to fill the order; then, to satisfy his customer, he must go out and purchase a sufficient quantity to fill the order. This transaction is, of course, excusable, business-like, and just.

261. When the different kinds of business—Shipping, Commission, and Merchandise—are by a merchant conducted in connection with each other, the shipping business must have its "Shipping Ledger," or else a portion of the general Ledger be reserved for that purpose; and the commission business must have its "Receiving" and "Consignment Books." Aside from these, the same set of books may be used for all the different kinds

of business. The Consignment Book is by some called a "Sales Book," but it should not be so called.

ACCOUNTS WITH ATTORNEYS.

262. Debit for all notes and accounts we hand to them for collection.

263. Credit for all collections by them made and turned over to us, on such accounts and notes as we gave them for collection.

264. EXPLANATION.—Whenever we give or send an account or a note to an attorney for collection, we open an account with the attorney, and debit him for such note or account; then credit the person's account, or the Bills Receivable account, for the amount,—writing on the credit side of such personal or Bills Receivable account the name of the attorney to whom handed, adding "Att'y" after his name; so that we may know, when we refer to such an account and see that it balances, that it is not balanced by *payment*, but by being handed to an attorney for collection. At the end of the year we require such attorneys to make a statement of the condition and probable worth of all such of our accounts and notes as they have in their hands, and we adjust the amounts to be carried therefrom to the Lost Accounts and Notes account accordingly. The attorney's account is not balanced, but is allowed to stand as a resource, the same as any other personal account owing us.

LOST ACCOUNTS AND NOTES.

265. Debit, during the year, for amounts we lose on accounts and notes by persons going into bankruptcy, making assignments, etc., etc.

266. Debit, at the end of the year, for approximated loss on worthless and part-worthless accounts and notes.

267. Credit for amounts that are afterwards paid on accounts and notes which we had heretofore called worthless and debited to this account.

268. CLOSING.—This account is closed the same as "Salaries" account. (See 202.)

269. EXPLANATION.—This account is kept in order to show, at the end of the year, how much we have lost during the year in poor accounts and notes. During the year we debit this account for all absolute losses on accounts and notes.

270. ACCOUNTS.—At the end of the year, before closing our books, we take the Ledger, and beginning with the first account therein, go through the entire book, carefully examining every account. It is wrong to take in the trial-balance at the end of the year, as Resources, such accounts as we know to be absolutely worthless, and such accounts for their full face as we know to be worth only a small per cent. on the dollar; therefore, when we come to an account we consider *entirely worthless*, we credit that account, in red ink, "By Lost Accounts and Notes" for the entire amount, balance the account thus closed, and carry the amount to the debit side of "Lost Accounts and Notes account,"—writing on the debit side of that account the name of the person upon whom the amount was lost. Such accounts as we think not entirely worthless we estimate the value of, credit same, in red ink, "By Lost Accounts and Notes" for amount considered worthless, and carry such amounts over to the debit side of Lost Accounts and Notes account. The accounts in the hands of attorneys are treated in the same manner.

271. NOTES.—Having thus disposed of the accounts in the Ledger, we take the notes on hand (Bills Receivable) and examine them closely. If we find any we know to be worthless, we debit Lost Accounts and Notes account, and, in red ink, credit Bills Receivable account for such amounts, —putting all such notes in an envelope, on which we mark "Worthless Notes." If we find a note which we think is not worth its full face, we approximate the value thereof, and for the amount considered worthless we debit Lost Accounts and Notes account, and, in red ink, credit Bills Receivable account; after which we may write on a slip of paper, "$.... thrown off as worthless," with date, pin the slip on the note, and put it with the notes considered good.

272. When we thus, at the end of the year, carry losses on accounts and notes to this account, we do not transfer the amounts direct, as might be inferred from reading thus far; but we first make a journal entry, with complete explanation accompanying, so that if we ever were obliged to take our books into court to prove these accounts, they would in this entry show what these credits were. The journal entry here referred to may be made in something of this manner:—First, write the date at the

top of the page, then below this write, "The following amounts on accounts and notes are this day by us considered *worthless*, and are, in consequence, here charged to Lost Accounts and Notes account." Under this heading make the journal entry thus: "Lost Accounts and Notes Dr. to Sundries;" after which, first enter the names and amounts of all personal accounts called worthless; then, the amounts called lost on accounts and notes in the hands of attorneys—entering first the attorneys' names; then, as an explanation, the names of the persons upon whom the accounts or notes are lost; then the amounts called lost on our Bills Receivable—writing first "Bills Receivable," then, as an explanation, the names of the makers of the notes, with date and time upon which the notes are drawn. We now find the sum total of all these doubtful accounts and notes thus sacrificed, and enter the same in the debit column on the same line with "Lost Accounts and Notes Dr. to Sundries;" after which, we open a Lost Accounts and Notes account in the Ledger, and, in black ink, either post to the debit side of same the total amount thus lost in one entry, or copy from the Journal each name and amount. The latter is recommended as the better way, as we often have to refer to this account, and it is better to have in the Ledger an itemized record of the amounts lost on accounts and notes. After having thus posted the debit, we proceed to credit each of the accounts here specified, upon which these amounts were lost. We credit the accounts in red ink, so that such entries may be more conspicuous; otherwise, in passing our eyes hastily over such accounts, we might think these amounts were payments. We may write on these accounts, as explanation, either "By Lost Accounts and Notes," or "Called Lost." It sometimes occurs that we carry an account along for several years, throwing off little by little at the end of each year, until finally "Patience ceases to be a virtue," and we "throw it all to the dogs."

273. PAYMENTS.—If a part of any of the accounts or notes which we had called *entirely worthless* should ever thereafter be paid, we credit the Lost Accounts and Notes account for such payments. When payments are made on any of the accounts or notes we called only *part worthless*, we first credit the personal account or Bills Receivable, whichever it may be, until the amount which we called good is all paid, and afterwards we credit the payments to the Lost Accounts and Notes account. A memorandum may also be made in lead pencil on the accounts, for payments on those which were by us called worthless.

274. This account is finally closed, and carried into Loss and Gain account the same as any other upon which we lose.

Most business houses call this account "Suspense," but the title here used is thought to be more expressive. Some houses balance all the doubtful accounts, whether worthless or only part worthless, and carry the total amounts of such to the Suspense account; afterward debiting Loss and Gain and crediting Suspense for an approximated per cent. of the total amount thus carried to Suspense, and calling the balance of the Suspense a resource, or the amount thought by them collectible. Some of the smaller business houses carry the amount lost on poor accounts and notes direct to the Loss and Gain account. The system herein recommended is thought to be better than either of these, for the reason that the amounts we know to be entirely worthless we at once *call so*, and make an entry accordingly; and of those accounts we think to be only part worthless, we carry amount thought worthless to an account representing the loss, and allow the amount called good to remain in the original account; thus, instead of "flooding" our Loss and Gain account by carrying each of these accounts therein, we simply carry to the account the grand total of such loss.

LOSS & GAIN.

275. Debit, at the end of the year, for all accounts upon which we have *lost* during the year—writing here, in black ink, the names of the accounts upon which such losses were sustained, and the amounts.	**276**. Credit, at the end of the year, for all accounts upon which we have *gained* during the year—writing here, in black ink, the names of the accounts upon which such gains were made, and the amounts.

277. *Directions for closing the Loss & Gain account at the end of the year:*

1st.—After all the accounts upon which losses and gains have been made are transferred, as directed in 275 and 276, then find the difference between the two sides of this account.

278. *Closing No.* 1.—If the *credit* side be the larger, the amount the credit exceeds the debit is the *net gain* for the firm, or the *net business gain.* We then divide this gain among the proprietors, *pro rata* or equally, according to agreement at commencement of business, and write on the debit side of this account, *in red ink*, the names of each of said proprietors, —adding "Private account" after each, and extending into the money

column the respective shares of the net gain. This having been done, the account will balance.

279. If the *debit* side be the larger, the amount the debit exceeds the credit is the *net loss* for the firm, or the *net business loss*. We then divide this loss among the proprietors *pro rata* or equally, according to agreement at commencement of business, and write on the credit side of this account, *in red ink*, the names of each of said proprietors—adding, after each, "Private account," and extending into the money column their respective shares of the net loss. This account will then balance.

280. *Closing No.* 2.—The same as Closing No. 1 in every particular excepting one—that of adding "Stock account" after the names instead of "Private account."

2nd.—Rule the closing lines and write the total amounts between these lines.

281. 3rd.—*Closing No.* 1.—If there be a *net business gain*, carry over to the credit sides of the respective *Private accounts* of each member of the firm, the respective shares of such gain (as indicated in red ink on the debit side of this account)—writing on the credit sides of these Private accounts, in black ink, "By ½ Net Gain," or whatever the proportion may be. (See 61.)

282. If a *net business loss*, carry over to the debit sides of the respective *Private accounts* of each member of the firm the respective shares of such loss (as indicated in red ink on the credit side of this account)—writing on the debit side of these Private accounts, in black ink, "To ⅓ Net Loss," or whatever the proportion may be. (See 60.)

283. *Closing No.* 2.—If there be a *net business gain*, the respective shares of such gain are carried direct to the credit sides of the respective *Stock* accounts of the members of the firm, instead of the Private accounts, as in Closing No. 1. (See 54.)

284. If a *net business loss*, the respective shares of such loss are carried direct to the debit sides of the respective *Stock* accounts of the members of the firm instead of to the Private accounts, as in Closing No. 1. (See 53.)

285. The difference between Closing No. 1 and Closing No. 2 is as follows: In the former we carry from the Private accounts the *net private* loss or gain to the respective Stock accounts; in the latter, we first carry the *net business* loss or gain from the Loss & Gain account to the respective Stock accounts, and then we carry to the same (Stock) accounts the amount by each drawn out for private use, as shown by the Private accounts.

286. *Single Proprietor.*—If there be but a single proprietor in the business, instead of carrying the net business loss or gain to his Private account, the Private account may be closed and carried over to the debit side of Loss & Gain account with the other accounts upon which he loses, then the Loss & Gain account closed and his net private loss or gain, as shown by this account, carried to his Stock account. Otherwise, the account may be closed as described in 277 to 285.

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287. EXPLANATION.—Loss & Gain account, or Profit & Loss, as it is sometimes called, is an account kept to show the final summing up of all our losses and gains during the year. Some business houses make several entries to this account during the year, but it is the better way to carry the losses and gains into other accounts until the end of the year, and then to carry these accounts into the Loss & Gain account. (See 275 and 276.) A business man wants to know as often as once in twelve months, and sometimes oftener, how much he has gained or lost in his business. In order to ascertain this, it becomes necessary, first to take an inventory and then to "close the books."

288. If the books are closed semi-annually, or oftener, the phrase "at the end of the year," heretofore used, *applies to the time the books are closed,* regardless of the actual end of the year.

THE END OF THE YEAR.

DIRECTIONS FOR CLOSING THE BOOKS.—

289. *First.*—Take an inventory of all the merchandise, store and office fixtures, real estate, buildings, unexpired insurance, unexpired taxes, etc., etc. Then close all these accounts as per instructions on each. (See 71, 95, 100, 106, 185, 188 and 200.)

290. *Second.*—Sacrifice all the worthless and partly worthless accounts and notes as per instructions in 270 and 271.

291. *Third.*—Close all accounts in the Ledger upon which losses or gains have been made, and transfer such losses and gains to the Loss and Gain account. (See 275 and 276.) For full instructions, read paragraphs 15 to 19, inclusive. A beginner, in closing books, frequently closes and carries over to the Loss and Gain account, accounts that he should not, and does not close and carry to that account, accounts that he should; but, if he will thoroughly read paragraphs 15 to 19, and follow the instructions found therein, he will experience no difficulty in this line.

We allow the Lost Accounts and Notes account to stand until the last, and finally close that account also, and carry it into the Loss and Gain account.

292. In closing the books at the end of the year, *nothing must be left in the Ledger but Resources and Liabilities;* and *nothing must be carried into the Loss and Gain account but Losses and Gains.* (See Ledger under "The Corner Stone.")

293. *Fourth.*—Having thus carried over to the Loss and Gain account all the accounts upon which we have lost or gained, we find the difference between the two sides of this account, which difference is either our *net business loss* or our *net business gain,*—we then dispose of that loss or gain according to instructions found in paragraphs 278 to 284.

294. When a transaction is posted, the same amount is entered in the debit side of the Ledger that is entered in the credit side (see 28)—therefore, if no mistakes are made, the two sides of the Ledger, at the end of each month, should exactly agree. I say "at the end of each month," because there are very few houses who do not reserve the debit and credit to Merchandise until that time, and then post the total for the month in one entry to that account. They often have several extra columns in their Cash Books and Journals for different accounts, which necessitates but one posting per month to each of these accounts; then, of course, the Ledger would not balance until all these totals were posted. By thus having these extra columns, double entry book-keeping is reduced to the simplicity of single entry, with very little additional labour.

295. When we close an account, and carry the amount to some other account, we always carry the amount *to the same side of the Ledger on which it was before;* therefore, the Ledger is never thrown out of balance by the closing of an account. For example: If the *debit* side of the Expense account be the larger, we close this account, and carry the amount to the *debit* side of the Loss and Gain account; if the *credit* side of Interest account be the larger, we close this account, and carry the amount to the *credit* side of Loss and Gain account.

Double Entry Book-Keeping.

THE TRIAL BALANCE.

296. The Trial Balance—the joy and delight (?) of every book-keeper! There is no rule or combination of rules with which a book-keeper can at once locate an error in his trial-balance. I wish there was, and that I were the sole possessor of that rule;—every book-keeper would then agree with me in this one fact, that I had, in the possession of that rule, *an independent fortune;* for no book-keeper would be without it, even at a cost of $10. However, it may be well to give here a few hints with regard to finding errors.

297. *In Round Numbers.*—If the difference be in round numbers, as $10, $100, or $1,000, the error may have been made in addition or subtraction.

If Divisible by 9.—If the difference be divisible by 9, the error may have been made in the transposition of figures.

If Divisible by 2.—If the difference be divisible by 2, the error may have been made by posting an item representing just one-half the difference to the wrong side of the Ledger.

Aside from the above three, there may be "a thousand and one" rules with which to detect errors in Trial Balances, but they are all of no practical use; for if the book-keeper, after having applied them all, still does not find the error, he is obliged finally to resort to the simple method of "checking off," and he then realizes that all the time spent on those "rules" was time thrown away, so it is better to proceed at once with the

COMMON-SENSE METHOD OF DETECTING ERRORS.

298. 1st.—See whether or not the balance of cash on hand, as shown by the Cash Book, is taken in the Trial Balance.

2nd.—See whether or not, on the Cash Book, Journal, and such other books as you post from, every debit and credit is checked as having been posted to the Ledger; *i.e.*, see whether or not, for every debit, a credit has been made for a like amount, and for every credit a debit.

3rd.—See whether or not any mistakes have been made in addition, or in carrying forward the totals on the Trial Balance.

4th.—Take the Ledger, and, from the beginning of the same, examine the addition and subtraction of every account, and if there be any accounts which have been balanced and carried forward to a new page, see whether the correct amount has been transferred; and finally, see whether or not the proper amount is entered in the proper column on the Trial Balance.

5th.—See whether or not any mistakes have been made in addition, or in carrying forward the totals on the Journal.

6th and last.—Examine the posting for the entire month from the beginning, seeing whether or not the proper amounts have been posted to the proper side of the Ledger. In thus examining the posting, it is well to check off in the Ledger, with a hard lead pencil, the items as soon as found to be correct.

If the error is not found after the foregoing "programme" has been exhausted, there is no other recourse but to go over it again and again until the error is found. It sometimes occurs that a book-keeper will pass over an error several times before discovering it.

299. The Trial Balance is simply a copy of the accounts in the Ledger. If the *debit* side of an account be the larger, find the difference between the two sides, and enter it in the left hand or debit column on the Trial Balance; and if the *credit* side of an account be the larger, find the difference between the two sides, and enter it in the right hand or credit column on the Trial Balance. As the Trial Balance is neither more nor less than merely a copy of the Ledger, in the debit column there must be nothing but Resources and Losses, and in the credit column nothing but Liabilities and Gains. (See 41 and 42.)

300. The monthly Trial Balance is taken simply to ascertain whether or not the books balance; therefore, all that is necessary at the end of each month prior to the time when the books are closed, will be merely to take the figures to the Trial Balance, since it is a waste of time to write the names of all the accounts. (See 808 for this form.) Some business men require the book-keeper to write on the Trial Balance the names of all the accounts as well as the amounts, believing that by so doing the book-keeper cannot conceal any "ways that are dark and tricks that are vain;" but this is a great mistake, for if a book-keeper is disposed to be "crooked," the most complete Trial Balance that ever was made would never exhibit the "crookedness."

301. At the end of the year, *before the books are closed*, the book-keeper ascertains whether his books balance by taking a Trial Balance in figures; and after the books have been closed he takes a Trial Balance, writing the names of all the accounts, as well as the amounts. So a Trial

Balance consisting of the names, as well as the amounts, is made only immediately after the books have been closed. (See 810 for this form.) There are many houses, however, that require such a Trial Balance at the end of every month.

302. In adding the money columns in the Ledger, write the totals in small figures in lead pencil, close under the last amount in the column; by so doing it is never necessary at the end of each month to add back of these amounts, but simply to add the entries for the month, including the lead pencil totals, which amounts to the same as it would by adding the entire column from the top. After the two columns have thus been added, simply subtract from one side to the other the lesser amount of these totals from the greater, and enter the difference in the explanation, or wide column, on the side upon which is the greater amount, which *difference* we transfer to the Trial Balance. (See 694 and 701.) This difference is entered in the explanation column simply as a memorandum showing the amount carried to the Trial Balance. Business colleges have in their Trial Balances two columns in which they enter the debit and credit *total amounts*, and two columns in which they enter the debit and credit *differences*, which makes a double Trial Balance, hence unnecessary work. For these additions and substractions in the Ledger I would recommend a "Faber HIIHH Drawing" pencil, as it is hard, and makes a neat, clean mark.

303. After the Trial Balance has been completed, a statement may be made in the firm's private record book, consisting of the present Assets and Liabilities; the Losses and Gains for the year; each member's private gain or loss for the year, and his present worth; together with the percentage of the gross gain, as well as the net gain, to the sales for the year. (See 812 to 818.)

304. Past-Due Accounts.—To all firms doing only a moderate business, that do not draw for or settle by note their customer's accounts when due, the author would suggest that the book-keeper prepare, on the first of every month when he takes his Trial Balance, a list of the accounts that are long past due—entering, with the person's name and the amount he owes, the number of months that this account averages over due. Would recommend a book ruled in Journal form and labelled "Past-Due Accounts," for this use. This book or list he submits to the firm for examination, when they decide what disposition shall be made of the accounts. By so doing an account cannot stand several months past due in the Ledger without the knowledge of the firm; for it is brought before them every month, and many accounts may be saved that otherwise

might be lost. It is not necessary for the book-keeper to ascertain the exact average, but simply to look over the accounts and approximate the average.

RED INK PROMISES.

305. The red ink entries that are made in the Ledger, will, in this work, be styled, "Red Ink Promises," the reason for which will be clearly perceptible to the pupil after having read this article. Beginners in the practice of book-keeping frequently close an account in red ink, and neglect to bring down or carry forward the balance; and for such persons this article is prepared. With the single exception in par. 270 and 271, red ink entries are never made in the Ledger except when we wish to balance an account and bring down below the closing lines or carry forward to a new page the amount for a new account; or, to carry the amount to some other account,—or both, as is the case with the closing of the Merchandise account at the end of the year. Therefore, when we balance an account with a red ink entry, we *promise that account* that after having ruled the closing lines, we will dispose of its value as indicated in the red ink entry, in one or more of the following ways:

1st.—If the red ink entry be "By Inventory," we promise the account that we will, after having closed it, bring down on the debit side below the closing lines the value of that inventory.

2nd.—If the red ink entry be "By Loss & Gain" or "To Loss & Gain," we promise the account upon which we write this, that we will transfer to the Loss & Gain account the amount here indicated as lost or gained.

3rd.—If the red ink entry be "By Private account" or "Stock account," or "To Private account" or "Stock account," we promise the Loss & Gain account that we will transfer the net gain or loss to that account.

4th.—If the red ink entry be "By Balance" or "To Balance," we promise the account that we will, after having ruled the closing lines, either bring down below these closing lines, or carry forward to a new page, the difference between the two sides of the account, as indicated in the red ink entry.

306. Having closed an account with a red ink entry, we always carry forward or bring down the amount *directly to the opposite side* of the Ledger from that upon which the red ink entry was made.

307. If these red ink promises are at all times fulfilled, the balance of the Ledger will never be affected by a red ink entry. On the other hand, any failure on our part to fulfil any of these promises insures for us a

punishment when we take our Trial Balance at the end of the month; for we may then be obliged to spend several hours in finding the account against which we "committed the offence."

308. *Balancing an account.*—When an account has filled a page and we wish to transfer it to a new page, we simply find the difference between the two sides and close the account as follows:

Credit.—If the *credit* side be the larger, write on the debit side, in red ink, "To Balance," for the sum of the difference, which will make the account balance; then rule the closing lines and write the total footings between the lines; after which, open a new page for the account, and write on the *credit* side of that account, in black ink, "By Balance" for the balance brought forward—writing on the old the page to, and on the new the page from which the account is transferred.

Debit.—If the *debit* side be the larger, write on the credit side, in red ink, "By Balance" for the sum of the difference, which will make the account balance; then rule the closing lines and write the total footings between the lines; after which, open a new account and write on the *debit* side of that account, in black ink, "To Balance" for the balance brought forward—writing on the old the page *to*, and on the new the page from which the account is transferred.

ON FILING BILLS.

309. When you enter your invoices only two or three times a month the author would recommend the following described method of filing them as the most economical, simple, and very best; because an invoice may be found in this way sooner than in most any other. First arrange the bills in alphabetical order, according to firm names; then each firm's bills in order of date; then enter them on the Journal under the Journal entry heading "Mdse. Dr. to Sundries;" then get an "Emerson's File and Binder," letter size, or one similar, place a piece of heavy paper on the bottom about the size of a large sheet of letter-paper, after which file the bills—the last letter in the alphabet first, and so on until you have them all in the file; then file another piece of heavy paper on the top, after which the volume may be taken from the file, and, after fastening, labeled in the following described way: First, "Invoices," then the month and year, and lastly the Journal No. and Journal page upon which these bills were entered. For example: Invoices—March, 1879—A.—124 and 125. Now, when these bills are posted to the Ledger, and we want to find a

certain bill, we refer to the credit side of the firm's account in the Ledger and find the Journal page upon which the bill was entered; then look for the file of bills which has on it this Journal page, when, as they are arranged in alphabetical order, the bill may be easily found. When there are too many bills to get into one volume, divide and bind them in two or more volumes; but never divide a page—divide the bills according to the Journal pages, and not according to the number of bills.

ON COPYING LETTERS.

310. In copying letters in a letter-book, get a set of good, clean blotters, throwing away the oil-board. A much clearer copy can be made by using blotters, and the copy is never so blurred and blotted that it can scarcely be read, as is often the case when oil-board is used. Use the blotters in the same manner as you used the oil-board.

DIRECTIONS FOR OPENING A SET OF DOUBLE ENTRY BOOKS FOR A FIRM JUST STARTING IN BUSINESS.

311. In opening a set of double entry books for a firm just starting in business, a statement of the actual assets and liabilities by each member invested should be made before an entry is made on the books. Then a separate entry should be made in the Journal for each member of the firm for such investment. When two or more persons first enter into a copartnership business, under a certain firm name, the individual assets by each invested become *the firm's assets;* and, therefore, the assets by each invested are debited to the firm's accounts representing assets;—and the individual liabilities by each invested become *the firm's liabilities;* therefore, the liabilities by each invested are credited to the firm's accounts representing liabilities; then the firm becomes indebted to each member of the firm for the amount that the individual assets by each invested exceed the individual liabilities; consequently, each member must be credited for the difference between his total individual liabilities and hi total individual assets. When the entries have been made in accordance with the foregoing remarks, the Ledger will balance and we may proceed according to the rules of double entry. (See 49 and 56.) For a complete illustration, see 347½ to 369.

DIRECTIONS FOR CHANGING A SET OF BOOKS FROM SINGLE ENTRY TO DOUBLE ENTRY.

312. The proceedings for changing a set of books from single entry to double entry are as follows, viz.:

1st.—Take an inventory of all the merchandise, store and office fixtures, fuel, real estate, buildings, unexpired insurance, unexpired taxes, bank or other shares, and whatever other values the firm may have; open an account in the Ledger for each, and debit all such accounts for the total value of each as represented by the inventory.

2nd.—Open a Bills Receivable account in the Ledger and enter on the debit side of that account all the unpaid notes (that we call *good*) held against others. (See 107.) If the parties from whom we received these notes were not credited for such notes at the time they gave them to us, they should be credited when the Bills Receivable account is opened.

3rd.—Open a Bills Payable account in the Ledger, and enter on the credit side of that account all the unpaid notes we have outstanding, made by us payable to other parties. (See 129.) If the parties to whom we gave these notes were not charged for such notes at the time they were by us given to them, they should be charged when the Bills Payable account is opened.

4th.—Open a Cash Book and enter on the debit side the total amount of cash on hand and in the bank; then proceed with this book according to instructions in paragraphs 13 and 75 to 86.

5th.—Open such accounts in the Ledger as you wish to keep to show your expenses during the year, such as Expenses, Salaries, Advertising, etc., etc. (See 194.)

6th.—Open an Interest account in the Ledger and use it according to instructions in paragraphs 144 to 154.

7th.—Now find the actual present worth of the firm by taking a Trial Balance, consisting of the names and amounts of all the accounts in the Ledger representing resources and liabilities, including the accounts just opened. In the single entry Ledger, as formerly kept, appear all the personal accounts owing to and by the firm—which accounts would of course be included in the Trial Balance as a part of the firm's assets and liabilities. Having thus copied into the Trial Balance all the accounts in the Ledger representing resources and liabilities, we find the sums total of the two columns, and the amount the debit column (representing resources) exceeds the credit column (representing liabilities) is the *net*

present worth of the firm—which net present worth should exactly agree with the sum total of the value of all the members' Stock accounts.

8th.—Having made the sum total of the members' Stock accounts agree with the sum of the net present worth of the firm, the Ledger will balance, and we may then proceed according to the rules of double entry.

313. Some firms adopt a system of book-keeping which is neither single nor double entry, but "betwixt and between." It is single entry with a few conveniences borrowed from double entry. For example: Many keep a Cash Book, an Expense account, so that they may see what their expenses have been during the year, and all keep Private accounts for each member of the firm, which they treat as described in paragraphs 57 to 65.

314. It is quite as easy to ascertain how much is lost or gained by the firm in the business by single entry as by double entry. In single entry the business man knows how much he is worth at the beginning of the year, and by taking an account of all his resources and liabilities at the end of the year, he may ascertain how much he is then worth—the difference between the amount worth at the beginning of the year and the amount worth at the end of the year being the net gain, or the net loss.

315. The phrase "at commencement of business," used throughout "The Foundation," may in every instance be applied to the entries made in changing a set of books from single entry to double entry.

ON TAKING IN A NEW PARTNER.

316. In taking a new partner into the concern, the strictly proper way to do is to close the books at the time the partner is received, in order that an exact statement of the present condition and worth of the firm may be attained; a Trial Balance, exhibiting the same, may be made and submitted to the new partner for inspection, in order that there may be no misunderstandings. When this is done, the Ledger exhibits nothing on its face excepting those accounts which are either Resources or Liabilities; and also shows the present net worth of each of the old partners. The new partner is then credited with his net investment; after which, the gains and losses of the new firm are shared proportionately, according to mutual agreement. In illustration of this method, see 347½ to 369.

317. Some firms, in taking in a new partner, simply take an inventory and make a statement of the actual present standing of the old firm; not

closing the books, but allowing all the accounts upon which losses and gains have been made to remain open until the end of the year. The former method is the better one, for the reason that there can afterwards be no dispute among the partners with regard to the relative individual standing of each at the time of the commencement of business under the new copartnership.

INVESTMENTS.

318. Investments are made in several different ways, a few descriptions of which are here given:—

1st.—The partners invest equally, and share equally in the losses and gains. After the partners first enter into business their interests in the firm are constantly changing, so at the end of the first year, when the books are closed, there may be a wide difference between the then present worth of each. The partners who have the larger interest in the business sometimes require those who have the smaller to pay interest to them on the surplus capital; but there are some who are more lenient with their unfortunate (but perhaps extravagant) co-workers, and do not require them to pay interest on the surplus.

2nd.—Capital is sometimes invested against Experience,—the partner investing the money having no experience in the business in which he enters, and the partner having the experience investing no money. All the money invested is of course credited to the party who invests it, the party who has the experience sharing a certain proportion of the gains or losses of the firm.

3rd.—Partners sometimes invest unequally and share the gains and losses *pro rata*, according to investment.

319. 4th.—*Interest on Surplus Capital.*—Partners sometimes invest unequally, and share the gains and losses equally,—the partner investing the lesser amount paying the partner investing the greater, interest on his surplus capital. When this is done, the partner who has the lesser amount invested pays to the partner who has the greater interest on *only one-half of the difference*, for the reason that it is the same in effect as borrowing so much money; and by borrowing an amount equal to one-half the surplus, lessens the investment of the partner who has the greater amount invested just that amount, and increases the investment of the partner who has the lesser amount invested the same amount, so that they then have an equal interest in the firm.

WHAT A BOOK-KEEPER SHOULD DO IN TAKING A SET OF BOOKS FROM ANOTHER BOOK-KEEPER TO KEEP.

320. In taking a set of books from another book-keeper to keep, you should first take a Trial Balance to ascertain whether or not the books balance. If they do not, the proprietors should be informed of the fact, and that they must be made to balance before proceeding. The next thing will be to look over the index to the Ledger and find out what other than personal accounts have been kept, so that you may know into what accounts Expense has been divided; for in some houses Expense is divided into several accounts, such as Freight, Insurance, Advertising, Salaries, etc., etc., while in others all expenses are entered under one heading. If you come across an account you never saw before, and which is peculiar to this business only, you must ascertain for what that account is used. Examine all the books in use, in order to get an idea of the system practised prior to your taking charge of the books—learning all you can from this system, and noting the points where improvements may be made. After this, ask for the notes held against others (Bills Receivable). Look over these notes and arrange them in order as they become due. If among these notes there are any having *indorsers*, you should not fail to present them to the makers for payment before three o'clock, P.M., on the day they fall due; and if not paid upon presentation, to have them *protested* immediately before a notary public. Failing to do this, all the indorsers are released, and the firm may look only to the makers for payment, and if they be not able to pay, the notes are simply worthless. In some States, however, it is not necessary to have notes bearing indorsers protested in order to hold the indorsers. The better way is to discount notes in the bank ten or fifteen days before due; then, if they are not properly attended to, the bank is responsible.

UNNECESSARY WORK TAUGHT IN THE BUSINESS COLLEGES AND PRACTISED BY MANY EXPERIENCED BOOK-KEEPERS, AND HOW TO AVOID IT.

321. In many business colleges, students are taught to balance the Ledger accounts every month, and bring down the balances. This idea is absurd; for in some business houses, where they have several thousand accounts, it would require a month's time for a book-keeper to do this

wholly unnecessary work. Excepting at the end of the year, when we close all accounts except those which represent Resources and Liabilities, we never close an account "To Balance" or "By Balance" until the page is full, and we wish to transfer the account to a new page (see 308); or, unless an account with a person be discontinued, and then, as this account balances, we simply rule the closing lines, and enter the totals between these lines.

322. It is also unnecessary work to rule Ledger headings, although the Ledger looks a little better thereby, and it might be done when the book-keeper has plenty of spare time. When we do not rule Ledger headings for the accounts opened below the top ruling, we simply write the name of the account over the centre ruling, and proceed on the next line below with the entries. Some Ledgers are ruled for one, two, three, and four accounts to the page; but it is better to have one common full-page ruling through the entire book, since by so doing we economize in Ledger paper, and have all the accounts together. When we open an account, we must calculate about how much space it may require, and allow so much space before opening another on the same page. Some accounts require several pages, while others require but a few lines.

327. *Petty Accounts.*—We sometimes sell small bills of goods on account to city customers—to persons who seldom buy of us except for cash. Not wishing to open an account with such persons, we enter all such names under a Ledger heading in the Ledger called "Petty Accounts." By so doing, the account takes up one line only. These accounts need not be indexed, but instead we simply index "Petty Accounts;" and anything we do not find in the index we will understand is to be found in the "Petty Accounts." We keep these Petty Accounts in the following manner:—Under this title in the Ledger we post the entries thus: When we charge a person, we make the entry on the debit side of the Ledger—writing first the date, next the person's name, then the Journal page, then the amount. When he pays this account, we write on the same line, on the credit side of the Ledger, opposite his name, the date, page, and amount. (See 736 to 746.)

328.—*Index Arrangement of the Ledger Accounts.*—On opening a new Ledger in a wholesale business, it proves a great convenience to arrange the accounts alphabetically according to the towns—leaving, after each town or city, a few blank pages for the new customers we may get, or the extension of the old accounts. When we arrange the Ledger in this way it greatly facilitates posting, since we write the name of the city or town on the outer margin of the top of the page, and by knowing

the town in which the customer resides, his account is easily found without referring to the index. An index must also be kept in order, that we may use it to find a name when we do not remember the town in which the person resides. Some firms index the towns, and not the persons' names. Should we have several accounts on one page, all belonging to the same town, we need only write the name on the top of the page.

In a retail business, the accounts may be arranged alphabetically, according to the names of the persons.

329. *On Committing the Pages to Memory.*—Some book-keepers who possess good memories commit to memory the account pages of almost the entire Ledger. In order that the pages may be more readily committed to memory, and that an account may be much more quickly found, I would recommend the following system for an index, which may be made from the index proper: Get a piece of heavy white cardboard, and from the index take the names of all such accounts as those to which a great many entries are made during the year,—beginning with "A" in the index, write these names in a bold, plain hand, arranging them in alphabetical form on this cardboard. Write the names of the accounts in ink, and afterwards add the pages in lead pencil. The object in writing the pages in lead pencil is, that they may be easily changed when the accounts are transferred to new pages. When posting, stand this card on the desk before you, and you will soon become so familiar with the location of the names that you can *instantly* place your eye upon any name you wish and learn the page upon which the account may be found.

330. *Red Checks.*—When a page is filled and closed up, or balanced, in the Ledger, so that no more entries can be made on it, make a red check at the top, immediately over the centre ruling and under the name, to indicate that it is dead, "buried in oblivion"—then, in taking the Trial Balance at the end of each month, when we see this red check at the top of a page we may pass it quickly by and not spend any time in examining the page to see whether or not there is anything to be carried to the Trial Balance. Would recommend the use of this red-check system to indicate *completion* on all books such as Order Books, etc.

331. *On Entering Invoices.*—Among the smaller business houses very few enter the invoices (bills of goods they buy) oftener than twice a month; and there are a great many who enter them only once a month. When these bills are received, they are first checked to indicate that the goods have been received in good order; then they are checked by the buyer to indicate that the prices are correct; after which, the "figuring" is exam-

ined, and if found to be correct they are marked "O. K.;" then put away or filed in a safe place until the middle or end of the month, when they are entered in the manner described in paragraph 309. (See also 74 and 401 to 407.)

332. *On Transferring Charges from the Sales Books or the Blotters to the Journal.*—When entries are transferred from the Sales Books or Blotters to the Journal before posting, the initials as well as the "& Co." may be omitted when there is but one person by that surname in the Ledger. For example: If you were journalizing an entry for F. B. & S. M. Hubbard, and you had only one "Hubbard" in the Ledger, you would simply write "Hubbard" in the Journal, with the amount and the Sales Book or Blotter page; or, if journalizing an entry for Scott, Thompson & Co., and you had no other "Scott" in the Ledger, you would simply write "Scott" in the Journal, and omit the balance of the name. The object of so doing being to save time in transferring the entries to the Journal; and as the entries are (or ought to be) at once posted to the accounts in the Ledger, it answers the same purpose as though they were written in full.

When there is more than one of the same surname, the name should of course be written in full; or, when we get a new customer, at the time the first entry is made his name should also be written in full, together with his address.

The Illustration of the Foundation;

Or, The Application of the Rules found in the Foundation.

333. Although it is frequently said that no two business houses keep their books exactly alike, yet the underlying principles which govern the art of book-keeping are the same in all systems; therefore, when a person has thoroughly mastered book-keeping in one branch of business, he is sufficiently qualified to take full charge of a set of books in any other business. When a business man asks you whether or not you have had any experience in book-keeping, he does not care to know whether or not you have ever kept books in his particular branch of business; but simply whether you have had experience as a book-keeper. He does not expect,

neither does he want you to plunge headlong into the work without first looking over the books, in order to get an idea of the system he has been using; and then, unless you can suggest some improvements which are at once recognised by him as such, he expects you to conform to his ideas, and keep the books according to the old system.

334. The business here chosen to illustrate the art of book-keeping, is that of the Retail Grocery. It is thought this business affords a sufficient variety of transactions to fully illustrate the points set forth in "The Foundation." The principles of double entry book-keeping may be as clearly illustrated with a small business, and small amounts, as with an extensive business, and large amounts; therefore, it is thought best to illustrate here the smaller business, and the less cumbersome figures. In order to see the application of the rules in "The Foundation," the paragraph numbers should be referred to, whenever given throughout "The Illustration."

335. The books used in this set are: Journal, Cash Book and Ledger. Paragraph Nos. 12 to 21, inclusive, should now be read, and *Nos. 26 to 48 be committed to memory.* The beginner should repeat, immediately before making each entry, this sentence: "Debit what we receive, and Credit what we give," and then make the entry accordingly.

336. *The First Half of the Month Here Illustrated.*—The first two weeks, the books are kept without Sales Books,—all the sales being recorded in the Journal. The employés are paid their wages in full at the end of each week, and consequently no accounts are kept with them. (See 203.)

337. *The Last Half of the Month Here Illustrated.*—The last two weeks, two Sales Books are kept, and are numbered "1" and "2,"—the on-account sales are transferred from these books to the Journal, as illustrated in paragraph Nos. 408 to 416. In business the sales are, of course, transferred to the Journal daily. (See 14.) The kind of Sales Books generally used in retail stores is small in size—about 6 x 12 inches and 4 to 6 quires. These books usually lie on the counters during the day, when sales are recorded in them, and at night they are taken by the book-keeper, and all orders which have been filled and not marked "Paid" are transferred to the Journal in the manner illustrated in paragraphs 408 to 416. In the last half of this month the employés do not draw their wages at the end of each week, but an account is kept with each employé, which is charged whenever any money is drawn, and credited at the end of the month for the salary allowed. (See 204.)

338. In order that "The Illustration" may be thoroughly understood, an explanation of same will be given to each entry: for the Journal and the Ledger, on the opposite page from the "Illustration"; for the Cash Book, on the pages following same. The "Ex." prefixed to a paragraph number signifies, that what follows is an explanation of that which follows the original paragraph number.

339. The object in having the Journal ruled in the form here shown, instead of having the columns all at the right of the page, is: (1) By having the debits at the left and the credits at the right of the entries, the book-keeper is not so liable to post an item to the wrong side of the Ledger. (2) When a Journal entry is made, the debit and credit may both be placed on the same line, and thus economize in paper and make the entries more compact. (3) The book presents a better appearance in being thus arranged.

340. A Journal ruled in the common form may be used for this system by either ruling an extra money column on the debit side of the book and two L. F. (Ledger Folio) columns—one on the left side and one on the right; or, by dispensing with the "Mdse. Dr." column, and simply ruling the two "L. F." columns; then, by using the column at the left which was originally intended for the date, for a "Miscellaneous Dr." column, writing the date in the centre of the page. If the latter method is adopted, the "Mdse." debit items must be entered in the "Miscellaneous Dr." column and posted to the Merchandise account in separate entries, the same as other debits are posted to their respective accounts.

341. In order that the beginner in the practice of book-keeping may know what entry to make, how to make it, and what explanation to write, it is thought advisable to insert here an

INDEX TO TRANSACTIONS.

Accept Time Draft drawn on us, 380-381.
Accept Time Draft drawn on us by a creditor in favour of a third party, 433-434.
Borrow money and give note therefor, 505.
Buy Bank Shares, 517.
Buy Mdse. and pay cash therefor, 519.
" " on account, 401 to 407.
" " and give note therefor, 459 and 444.
" " and accept time draft therefor, 403, 380-381.
Buy Produce from farmer for cash, 519.
" " " " on account, 386.
Buy Store and Office Fixtures, and pay cash therefor, 511, 514, etc.
Buy Store and Office Fixtures, and give note therefor, 390-391.
Charge Interest on an account, 382-383.
Charge R. R. Co. for overcharge on Freight, 393-394.
Compromise for full settlement at a certain per cent. on the dollar, 500, 450 and 451.
Discount note bearing interest, 495 and 496.
" " not bearing interest, 489 and 509.
Draw Sight Draft and have same paid by the person upon whom drawn, 492.
Draw Time Draft and have same "accepted" by the person upon whom drawn, 303, 380 and 381.

Enter Mdse. sales from Sales Books, 408 to 416.
" Employés' salaries, 453 to 457.
" total Mdse. Dr. and Cr. at end of month, 469 and 470.
Give Attorney an account to collect, 441-442.
" " a note to collect, 417-418.
Give a person a check on account, 544.
" " note " 396-397.
Give a creditor an order on a debtor for goods, 431-432.
Give a creditor a sight draft on a debtor, 439 440.
Have carpenter work done on store fixtures, 399-400.
Loan money and receive note therefor, 542.
Make payment on our note, 543.
Mdse. returned to us on account, 376 to 378.
Our customer discounts bill and pays cash, 497 and 534.
Pay cash for Advertising, 526.
Pay our Acceptance (or Time Draft), 524.
Pay Bank Collection charges, 523.
Partner draws money for private use, 540.
Pay for Exchange, 533.
" items of Expense, 507, 518, etc.
" Insurance, 508.
Partner takes Mdse. for private use, 395.
Pay private bill for partner, 541 and 546.
Pay Sight Draft drawn on us, 527.
Receive cash on account, 499 and 504.
Receive note on account, 373-374.
" a payment on note, 488.
" a check on account, 489½.
" cash for overcharge on freight, 491.
" cash for interest on a note, 404 and 496.
Receive cash as part payment on a note, and have balance renewed by taking a new note, 493 and Ex. 493.
Receive new note for renewal of old note, interest, and balance of account, 421 to 425.
Receive from commission merchant Account Sales for credit of our customer, 419-420.
Receive new note for renewal of old note and interest, 435 to 437.
Receive Mdse. returned from our customer, 376 to 378.
Return Mdse. to person from whom we bought it on account, 379.
Sell Mdse. and receive cash therefor, 486.
" on account, 370 and 408 to 416.
Sell Mdse. and receive note therefor, Lyman account and 449.
Send Bank Draft on account, 521.
Send Bank Draft for our note and interest, 531 and 532.
Take up note which we had discounted in the bank, 530.
Time Draft we draw returned to us "accepted" by the person upon whom we made it, 388-389.

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62 St. Catharines, December 1st, 1882.

Misc. Dr.	Miscell. Dr.	L. F.		L. F.	Miscell. Cr.	Mdse. Cr.
34 2.	34 3.	344		345.	34 6.	34 7.
347½			J. H. Goodwin and S. A. Emerson have this day entered into copartnership for the purpose of transacting a Retail Grocery Business. The style of the firm is to be "Goodwin & Emerson." The gains and losses are to be shared equally. The investments are as follows:—			
			J. H. GOODWIN'S INVESTMENT.			
			RESOURCES.			
348.	500 00	C B.	Cash—Balance on hand.			
349.	3376 40	40	Mdse.—On hand, per Inventory.			
350.	130 00	41	Store and Office Fixtures, per Inventory.			
351.	20 00	42	Expense—Coal on hand.			
352.	304 00	44	G. W. Bennett.			
353.	162 50	43	Sam. Hurto.			
354.	84 00	44	F. H. Miller.			
355.	187 50	44	Frank Richardson.			
356.	200 00	41	Bills Rec.—Note, Ed. Russell, 11-18-80, 30 ds.			
357.	100 00	41	" " " " " 60 ds.			
358.	200 00	41	" " " " " 10-20-80, 60 ds.			
359.	240 00	41	" " " A.T. Porter, 11-20-80, 30 ds.			
360.	100 00	41	" " " S.A. Fisher, 10-12-80, 60 ds.			
			LIABILITIES.			
361.			Bills Pay.—Acc., Arbuckle Bros., 11 13-80, 30 ds.	41	040 00	
362.			Bills Pay.—Note, Thurber & Co., 10-22-80, 60 ds.	41	500 00	
363.			Toronto Tobacco Co.	45	340 40	
364.			Samuel Cupples & Co.	45	344 00	
365.			Baker & Co.	45	280 00	
366.			J. H Goodwin, Stock acc.—*Net investment.*	40	3500 00	
			S. A. EMERSON'S INVESTMENT.			
367.			Sundries Dr. to S. A. Emerson, Stock acc't.	40	3500 00	
368.	2500 00	C.B.	Cash—Balance on hand.			
369.	1000 00	41	Bills Rec.—Note, Hugo Smith, 11-14 80, 30 ds			
			2.			
370.	4 10	44	Ed. Russell, Dr. 5 lbs. Rio Coffee, 20c. 1 00 1 lb. Y. H. Tea, 70c. 8lbs. A. Sugar, 1.00, 1 70 2 cans Peaches, 20c. 40			
371.			1 gal. Syrup, 75c., 1 Broom, 25c 1 00			4 10
372.	12 00	44	Alex. Dollus, Dr 4 bbls. Apples, 3 00			12 00
			4.			
373-374.	200 00	41	Bills Receivable Dr. to G. W. Bennett. Rec'd his note at 60 ds. from 12-4 80.	44	200 00	
375.	3 55	44	Alex. Dollus, Dr. 1 keg Holland Herrings, 1 25 1 sack XX Flour, 1 50 2 doz. Oranges, 40c., 80			3 55
			5.			
376. 1 45			Mdse. Dr. to Sundries.			
377.			Ed. Russell, 1 can Peaches, ret'd,	44	20	
378.			Alex. Dollus, 1 keg H. Herrings, ret'd,	44	1 25	
379.	5 00	46	G. W. Borland & Co., Dr 5 kegs Holland Herrings, spoiled, @ 1 00			5 00
			8.			
380-381.	218 60	46	Arbuckle Bros. Dr. to Bills Payable, Acc. their D'ft at 60 ds. from 12-3-80.	41	218 60	
382-383.	2 50	44	Frank Richardson Dr. to Interest, Int. on acc't to date.	42	2 50	
384. 1 45			Mdse. forward,			24 65

EXPLANATION OF THE JOURNAL—OPPOSITE PAGE.

THE COLUMNS.

Ex. 342 and 347.—These are the columns referred to in paragraph 12. In the Mdse. Dr. column is entered all merchandise bought by us and returned to us; and in the Mdse. Cr. column is entered all the merchandise sold by us, and returned by us to other parties. (See 67 to 70.)

Ex. 343 and 346.—These are the columns referred to in paragraphs 39 and 40. All debits which are not Mdse. debits are entered in 343 column; and all credits which are not Mdse. credits are entered in the 346 column. *In posting, we post only the items found in these columns.*

Ex. 344 and 345.—These are the columns referred to in 325 and 340. When we have posted an item to the Ledger, we indicate the page to which it is posted in these columns. So it will hereafter be understood what the figures in these columns indicate. These figures also show the book-keeper where he ended his posting.

Ex. 347½.—In order that the beginner may be prepared to "encounter" any set of books that is presented to him, it is thought best to give here a seemingly complicated example. When partners first enter into business, they usually invest all cash, or cash and note—the entry then is a very simple one, and is made in the manner represented in paragraphs 367, 368 and 369; but, when one of the partners has been engaged in business and takes in a partner, the entry then is more difficult and complicated,—such an example is here presented. Goodwin has been engaged in the Retail Grocery Business, and on the first of December, 1880, takes in as a partner S. A. Emerson. The proceedings for opening the books for the new firm, are described in paragraphs 311, 316, 317 and 49. In changing a set of books from single entry to double entry the entry in the Journal would be made in the same manner as the example here illustrated, with the exception of the personal accounts, which amounts would already appear in the Ledger and of course would not require posting unless a new Ledger was opened,—then they would have to be transferred. It is presupposed, in this set, that when the new partner (Emerson) is taken in, a new set of books will be opened; hence all of Goodwin's old accounts are transferred to the new Ledger.

THE ENTRIES.

Explanation of Goodwin's Investment.—Ex. 348.—Cash on hand transferred with Emerson's $2,500 to the Cash Book. (See 485.)

Ex. 349.—Goods in store. (See 66.) Posted to 584.

Ex. 350.—Counters, shelves, desks, chairs, etc., in store and office. (See 92.) Posted to 592.

Ex. 351.—Coal on hand which was debited to Expense account when bought. (See 195.) Posted to 644.

Ex. 352, 3, 4 and 5.—These are personal accounts owing to Goodwin. (See 164 and 173.) Posted to 688, 691, 702 and 704.

Ex. 356 to 360.—These are unpaid notes held by Goodwin against these persons,—with the date and time upon which each is drawn affixed. The 11-18-80, 30 ds, signifies the note was made on November 18th, 1880, on 30 days time. It is not necessary to add, in an explanation to an entry, whether or not the note is made *with interest*, as the Bill Book shows that. Goodwin endorses these notes over to the firm, Goodwin & Emerson. (See 107.) Posted to 602 to 606.

Ex. 361.—This is a Time Draft, which was drawn by Arbuckle on Goodwin, and by Goodwin "accepted," and being not yet due on December 1st, is still unpaid; therefore, the same in effect is an outstanding note. (See 129.) Posted to 633.

Ex. 362.—This is an unpaid note owing by Goodwin to Thurber & Co. (See 129.) Posted to 634.

Ex. 363, 4 and 5.—These are personal accounts Goodwin owes. (See 174.) Posted to 749, 751 and 753.

Ex. 366.—After thus having made a record of all his present Resources and Liabilities, Goodwin now find the difference between the sums total of each, which difference is found to be $3,500, which amount is his *net present worth*, and this he credits to his Stock account. (See 49.) Posted to 564.

Explanation of S. A. Emerson's Investment.—Ex. 368.—He invests cash $2,500, and the amount, together with Goodwin's $500, is posted to the debit side of the Cash Book. (See 75 and 76; also 485.)

Ex. 369.—Emerson holds a note made by Hugo Smith, payable to him, for $1,000, which note is endorsed by W. Scott, who guarantees the payment. Emerson endorses this note over to the firm—Goodwin & Emerson—when it becomes the firm's property. (See 107, 116 and 117.) Posted to 607.

Ex. 367.—As Emerson has no Liabilities, his Stock account is now credited for the sum total of his Resources—$3,500. (See 49.) Posted to 569.

Ex. 370.—Russell buys goods from us on account, so we debit him in the "Miscellaneous Dr." column. It is not necessary to make a formal Journal entry, thus: "E. Russell Dr. to Mdse.," before proceeding to make

a record of the goods we sell to him; but proceed in a common-sense manner by simply writing: "E. Russell, Dr.;" then on the next line begin with the items, omitting the "To" which is by many prefixed to the items. "Red Tape" does very well for the army and navy, but the business man has no use for it. After all the items have thus been entered, the total is found and that amount is extended into column 347 to the credit of the Merchandise account. (See 371, 68 and 165.) The debit to Russell is posted to 707, and the credit to Merchandise is not posted until the end of the month, and then it, with all the other merchandise sales, is posted to the credit of Merchandise account in one entry. (See 470.)

Ex. 372.—Same as 370. Posted to 714.

Ex. 373 and 374.—Bennett is owing us $304. He gives us a check on the bank for $104, which is entered in the Cash Book; and a note at 90 days for the balance, which is entered here; Bills Receivable account being debited for the note received and his account credited, with all the explanation that is required following on the next line. (See 108, 113 and 171.) 373 is posted to 608. 374 posted to 696. Remember that nothing is entered in the two outer columns except *merchandise items.*

Ex. 375.—Same as 370. Posted to 715.

Ex. 376, 377 and 378.—These parties having found that the goods they bought of us were spoiled, now return them. We give them credit and debit Merchandise in column 342. (See 376.) The credits to Russell and Dollus (377 and 378) are posted to 710 and 719; and the debit to Merchandise is not posted until the end of the month, when it, with all the other Merchandise debits entered in this column, is posted to the debit of the Merchandise account in one entry. (See 69 and 168; also 469.) When goods are returned to us that were sold for cash, and we return the money for same we may either take the money out of the sales drawer, and thus make the sales for the day less, or take it out of our regular cash drawer, and debit the amount returned to Merchandise on the Cash Book.

Ex. 379.—When the keg of herrings is returned to us by Dollus, as spoiled, we examine those remaining in our stock, and find there are in all 5 kegs of same spoiled; so we return them to the firm from whom we bought them, G. W. Boreland & Co., charging Boreland and crediting Merchandise. (See 178 and 70.) Posted to 775.

Ex. 380 and 381.—We are owing Arbuckle Bros. They draw on us at 60 days from Dec. 3rd, 1880; we write "Accepted," etc., across the face of the draft, and return it to them, and by so doing promise to pay them in 60 days from Dec. 3rd, this amount, which is the same in effect as giving

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63. December 9th, 1882.

Mdse. Dr.	Miscell. Dr.	L. F.		L. F.	Miscell. Cr.	Mdse. Cr.
			Mdse. forward,			24 65
385. 1 45			Mdse. Dr. to Ed. Russell,	44	16 00	
386. 16 00			50 doz. Eggs, 20c. 10 00			
			20 lbs. Butter, 30c. 6 00			
			10.			
	387. 10 80	44	Ed. Russell, Dr.			
			3 bbls. Salt, 2.00 0 00			
			1 bbl. Flour. 4 80			10 80
			11.			
	388-389. 190 00	41	Bills Receivable, Dr. to Frank Richardson.	44	190 00	
			He accepted our D'ft at 90 ds. from 12-8-80.			
			13.			
	390-391. 150 00	41	Store & Office Fixtures, Dr. to Bills Payable	41	150 00	
			Gave Taylor's Safe and Lock Co. note at 30			
			ds., 12-13-80, for Safe.			
			Frank Burgess, Dr.			
	392. 7 35	44	2 lbs. Cheese, 30c., 1 doz. Eggs, 25c. 55			
			18 lbs. A Sugar, 2.00, 1 Broom, 30c. 2 30			
			1 bbl. Apples, 3.00, 1 sack Flour, 1.56, 4 56			7 35
	393-394. 1 00	45	L. S. & M. S. Ry. Dr. to F'rt and Express,	42	1 00	
			Ov'rch. on 20 bbls. Sugar at 5c., 12-4.			
			14.			
	395. 2 55	40	S. A. Emerson, Dr			
			2 gals. Vinegar, 50c., 5 lbs. Butter, 1.50, 2 00			
			3 lbs. Lard, 30c., 1 can B. Powder, 25c. 5			2 55
	396-397. 189 30	46	Procter & Gamble Dr. to Bills Payable,	41	189 30	
			Sent note at 60 ds. from 12-8-80.			
			15.			
	398. 3 00	46	G. W Borland & Co., Dr.			
			20 Empty Boxes, 15			3 00
	399-400. 4 00	41	Store and Office Fixtures Dr. to F. Burgess,	44	4 00	
			For making new shelves.			
401. 558 51			Mdse. Dr. to Sundries.			
			14.60 5.25			
			J. K. Armsby & Co. 2 13	46	19 85	
	402.		Arbuckle Bros., 60 ds. 3	46	218 60	
	403.		B. T. Babbitt, 30 ds. 6	46	120 00	
	404.		28.40 17.85			
			G. W. Borland & Co. 2 14	46	46 25	
	405.		Toronto Tobacco Co., 60 ds. 11-28	45	64 19	
	406.		Sprague, Warner & Co. 7	46	89 62	
	407.					
			17.			223 53
	408.		Sundries Dr. to Mdse.,			
	409. 7 23	44	Frank Burgess, 1-43			
	410. 2 35	40	S. A. Emerson, 44			
	411. 9 60	45	R. N Buck, 44			
	412. 42 86	44	Ed. Russell, 44			
	413. 22 40	44	Alex. Dollus, 2-51			
	414. 6 40	45	H. S. Cole, 2-51			
	415. 32 19	44	G. W. Bennett, 56			
	416. 100 00	45	Wm. Dorman, 57			
	417-418. 100 00	43	H. L. Richardson, Att'y, Dr. to Bills Rec.	41	100 00	
			Gave him for coll. S. A. Fisher's note of			
			Oct. 12-80 at 60 ds.			
			18.			
	419-420. 14 60	46	J. K Armsby & Co. Dr. to Ed. Russell,	44	14 60	
			For Acc't—Sales of Cheese reported by			
			Armsby for acc't of Russell,			271 83
575 96			Forward,			

them our note; therefore, we debit them and credit Bills Payable. (See 182, 132 and 133.) 380 posted to 754. 381 posted to 635.

Ex. 382 and 383.—Richardson is owing us an account which is long past due, so we charge him interest and draw on him at 90 days for the amount of his account and interest. The interest is charged here, but no entry is made of the draft until it is returned. (See 151 and 142.) 382 posted to 705. 383 posted to 664.

Ex. 384 and 385.—When a Journal page has been filled, the totals of the Mdse. Dr. and Mdse. Cr. columns are found and carried forward to the following page; and thus the totals are carried forward from page to page until the end of the month.

Ex. 386.—Russell is a farmer, and brings produce into market; we buy it from him and give him credit on his account. (See 67 and 175.) Posted to 711.

Ex. 387.—Same as 370. Posted to 708.

Ex. 388 and 389.—The draft we drew on Richardson December 8th is now returned to us "accepted" by him. This draft having been accepted by him and returned to us, is the same in effect as though he had sent us a note; therefore, we debit Bills Receivable and credit Richardson. (See 114, 115 and 172.) 388 posted to 609. 389 posted to 706.

Ex. 390 and 391.—We buy a safe from T. S. & L. Co., and give therefor our note at 30 days. Debit Store and Office Fixtures for the safe we receive, and credit Bills Payable for the note we give. (See 93 and 130.) 390 posted to 595. 391 posted to 636.

Ex. 392.—Same as 370. Posted to 723.

Ex. 393 and 394.—The Railroad Company charged us 5 cents per bbl. too much for freight bill of recent date for 20lbs. Sugar. We are not allowed to deduct the over-charge from the bill and pay the balance; but are obliged to pay the full amount of the bill; then we may make the claim to the Railroad Company,—charge them, and credit Freight and Express. If they do not allow this claim after we have thus charged it, we are then obliged to debit Freight and Express, and credit them—thereby undoing the charge first made. (See 206.) 393 posted to 736. 394 posted to 650.

Ex. 395.—Emerson takes goods from the store for his private use. (See 59.) Posted to 577.

Ex. 396 and 397.—We are owing P. & G. on account for a bill of goods we bought from them on 60 days. On the 14th of December we write a note and send it to them, dating the note Dec. 8th, 1880,—the date of the bill. (See 181, 130, and 131.) 396 posted to 761. 397 posted to 637.

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64. December 21st, 1882.

Mdse. Dr.	Miscell. Dr.	L. F.		L. F.	Miscell. Cr.	Mdse. Cr.
			Forward,			271 88
575 96	178 23	41	Bills Receivable Dr. to Sundries.			
421.			Bills Rec.—Old Note, Ed. Russell, 200.00,			
422.			paid 50.00, 11-18-80, 30,	41	150 00	
			Interest on above,	42	1 27	
423.			Ed. Russell, bal. on acc't,	44	6 96	
424.			Rec'd following described notes from Ed.			
425.			Russell to balance old note, int. and acc't:			
			Dec. 21-80, 30 ds., $100 00			
			" " 60 ds., 78 23			
			Sundries Dr. to Mdse.			204 52
426.			Bennett, 1-58			
	23 12	44	Adolph Piper.			
	4 20	45	Dollus.			
	34 90	44	H. M. Dickinson.			
	3 10	45	Burgess.			
	28 45	44	Benj. Goodwin, jr.			
	5 65	45	Emerson, 59			
	3 12	45	D. Cameron.			
	42 00	45	W. C. Lyman, 73 Dufferin ave., 60			
	14 80	45	Tom Keene, 320 Church street, 62			
			Mdse. Dr. to Sundries.			
427. 2 10			C.B.—36	44	50	
428.			Bennett,	45	1 00	
429.			Lyman,	44	60	
430.			Dollus, 37			
			23.			
431-432.	20 00	46	G. W. Borland & Co. Dr. to G. W. Bennett, Gave Borland order on Bennett for dry goods, dated Dec. 23-82.	44	20 00	
433-434.	28 45	46	Sprague, Warner & Co. Dr. to Bills Payable. Acc. their D'ft 30 ds. from 12-20-82, favor of Thompson & Risley.	41	28 45	
435.	241 76	41	Bills Receivable Dr. to Sundries.			
436.			Bills Rec.—Old Note, A. T. Porter, 30 ds			
			11-20 82,	41	240 00	
437.			Interest on above,	42	1 76	
			Rec'd note at 60 ds. from Dec. 23-82, for $241.76, to renew old note and int.			
			24.			30 56
438.			Sundries Dr. to Mdse.			
	11 45	44	Dollus, 2-64			
	12 00	45	Keene.			
	7 14	45	Lyman, 68			
439-440.	50 00	46	J. K. Armsby & Co. Dr. to Alex. Dollus, Gave Armsby S't D'ft on Dollus.	44	50 00	
441-442.	100 00	43	H. L. Richardson, Att'y, Dr. to Wm. Dorman, Gave him Dorman's acc't for collection.	45	100 00	
			25.			
443.			Sundries Dr. to Bills Payable,	41	275 69	
444.	146 00	46	Arbuckle Bros.—Sent note 60 ds. 12-18-82.			
445.	65 50	46	B. T. Babbitt— " " 30 ds. 12-14-82.			
446.	64 19	45	Toronto Tobacco Co.—Acc't D'ft 60 ds. 11-28-82.			
			27.			
447.	59 97	41	Bills Receivable Dr. to Sundries.			
			Rec'd following described notes:			
448.			Frank Burgess—Note 60 ds. 12-25-82.	44	39 03	
449.			W. C. Lyman—Note 30 ds. 12-27-82.	45	20 94	
450-451.	65 00	47	Lost Acc'ts and Notes Dr. to Sam. Hurto, Compromised with him for 60 cents on the dollar. His acc't $163.50. Lost 40 per ct.	43	65 00	
			28.			
452. 60			Mdse. Dr. to G. W. Bennett, C.B.—49.	44	60	
			Forward,			506 99
578 66						

Ex. 398.—This firm buys of us empty boxes, and as the cases or boxes are usually charged to us on the bills of goods we buy, and are consequently entered by us as merchandise, we must now credit Merchandise. Posted to 776.

Ex. 399 and 400.—Frank Burgess, our customer, is a carpenter, and we employ him to make for us some new shelving, for which shelving we allow him $4. This amount he wishes credited to his account, so we debit Store and Office Fixtures, and credit him. 399 posted to 596. 400 posted to 726.

Ex. 401 to 407.—It is now the middle of the month; therefore, we take the invoices which have accumulated since the first, arrange them in alphabetical form, and enter them in the manner here illustrated. The "$\frac{14}{2}\ \frac{60}{}$" and "$\frac{5}{13}\ \frac{25}{}$," in paragraph 402, is but an abbreviated way of indicating Dec. 2nd, 1880, $14.60, and Dec. 13th, 1880, $5.25,—these being the dates and amounts of bills we bought from Armsby. We sometimes enter a great many bills for a firm, and this way of entering them is then found to be a great convenience, as much time and much Journal paper is saved by so doing. (See 460 for a better example.) When there is only one bill, we simply write the day of the month on the end of the line, as in 403, for Dec. 3rd,—*i.e.*, if the bill is dated in the *present month;* but if dated in the previous month, we indicate the month and day as in paragraph 406 for Nov. 28th. If the time on which the goods were sold is given, we add the same after the name, as in paragraph 403, etc. After the bills have all been entered, we find the sum total of them, and enter that amount to the debit of Merchandise in the "Mdse. Dr." column. (See 309, 331, and 175.) 402 to 407 posted to 766, 767, 756, 759, 778, 779, 750, and 783.

Ex. 408 to 416.—These are charges transferred from Sales Books 1 and 2, referred to in paragraph 337. It is not thought necessary to give, in this work, the form of the Sales Book, as an entry made in this book is made in precisely the same form and manner as in paragraph 370, and when transferred to the Journal, simply the amount, person's name, number of Sales Book and page is taken. When we wish to refer to an original charge, we turn to the Journal, and here find the book (Sales Book) and page upon which the sale is recorded. In this example, 409 to 412 are transferred from Sales Book 1, and 413 to 416 from Sales Book 2,—the pages upon which such charges are made being added. (See 14.) Having entered all the charges from the Sales Books, we find the sum-total of them all, and credit Merchandise in the "Mdse. Cr."

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65. December 21st, 1882.

	Mdse. Dr.		Miscell. Dr.		L. F.		L. F.	Miscell. Cr.		Mdse. Cr.	
	578	66				Forward,				506	99
453.			72	50	42	Salaries Dr. to Sundries.					
						For (½) month of Dec., 1882.					
454.						M. W. Saxton,	43	25	00		
455.						Jas. Kinsella,	43	20	00		
456.						F. P. Mast,	43	20	00		
457.						Herman Smith,	43	7	50		
458.	493	89				Mdse. Dr. to Sundries.					
459.						Arbuckle, 60 ds. 18	46	146	00		
						60 30 60					
460.						Armsby, 20.00 14.30 12.00	46	47	20		
						15 17 18					
						" 5.40 2.79 11.60 6.70		26	49		
						20 23 27 29					
461.						Babbit, 30 ds. 14	40	65	50		
						12.00 7.40					
462.						Borland, 17 23	46	19	40		
463.						Procter & Gamble, 60 ds., 8	40	139	30		
464.						The following amounts, on accounts and notes, are this day by us considered *worth less*; and are therefore charged to Lost Acc'ts and Notes:					
465.			78	45	47	Lost Acc'ts and Notes Dr. Sundries.					
466.						Alex. Dollus,	44	32	51		
467.						Bills Rec. W. C. Lyman's note, Dec. 27th, '82, 30 ds.,	41	20	94		
468.						H. L. Richardson, Att'y. William Dorman acc't,	43	25	00		
469.	1,072	55			40	Mdse. Dr. Total for Dec., 1882.					
470.						" Cr. " " "	40			506	99

column for the amount. 409 to 416 posted to 724, 578, 737, 709, 716, 738, 692, and 734. Paragraphs 411 and 414 are petty accounts referred to in paragraph 327.

Ex. 417 and 418.—Fisher's note was due on the 14th instant, but he failed to pay it, and, as there seemed to be poor prospect of our collecting the account, we hand it over to our attorney, Richardson, for collection This note was debited to Bills Receivable account, so we now credit Bills Receivable, and debit Richardson. (See 262 and 264.) 417 posted to 684. 418 posted to 621.

Ex. 419 and 420.—Russell, the farmer, sent to Armsby, the commission merchant, cheese to be sold on commission, with instructions to pay the proceeds of the sales of same to us. As we are owing Armsby & Co., they render to us an account-sales, and request us to give Russell credit for the amount of same. We then debit Armsby and credit Russell. 419 posted to 763. 420 posted to 712.

Ex. 421 to 425.—Russell's note of November 18th, at 30 ds. for $200, is now due. On December 3rd he paid $50 on this note. (See 488.) He is now unable to pay the balance, and wishes to give us two notes for the balance of the old ($150), and the interest on same to date ($1.27), and the balance of his account in the Ledger ($26.96). We take from him the new notes (see 425), and surrender to him the old note. 421 posted to 610 and 611. 422 posted to 624. 423 posted to 667. 424 posted to 713. Another way of recording this transaction would be to debit Russell's account for the balance due on the old note surrendered and interest, and then credit his account for the new notes he gives us. If this method were adopted, the entry would then be as follows:—

151.27	Ed Russell Dr. to Sundries,		
	Bills Receivable,	$150.00	
	Interest,	1.27	
	Surrendered note of Nov. 18-82—30 ds.— $200. Payment on same, $50.		
178.23	Bills Receivable Dr. to E. Russell,		178.23
	Rec'd following-described notes:		
	Dec. 21-82—30 ds.—$100.00		
	" " 60 " 78.23		

Ex. 426.—Same as 408 to 416. After a customer's name has become familiar to us, and we have only one person by that surname in our Ledger, we omit the initials, as in this example. (See 332.) It is not necessary to ditto the Sales Book page; but we understand that it is the

same as above until changed. Piper, Dickenson, Goodwin, and Cameron are petty customers, and these amounts are posted under "Petty Accounts." Lyman and Keene are new customers, therefore residence is added. It is not thought necessary to indicate where the amounts in this example are posted, as the student by this time has sufficient knowledge of posting such charges.

Ex. 427 to 430.—When goods are frequently returned to us, it is advisable to keep a "Credit Book" in which to enter these credits. When this is done, we simply write in that book the person's name and a description of the goods returned; then those credits are transferred to the Journal in the manner here indicated,—entering the person's name, C. B. for Credit Book, the page and amount. 428 posted to 697. 429 posted to 730. 430 posted to 720.

Ex. 431 and 432.—We give Borland, whom we are owing, an order on Bennett (a dry goods merchant), who is owing us, for dry goods to the amount of $20, with instructions to Bennett to charge the same to our account. This is to us the same in effect as giving Borland a sight draft on Bennett, so the entry is made the same as in paragraphs 439 and 440,—the explanation only being different. 431 posted to 777. 432 posted to 698.

Ex. 433 and 434.—We are owing S. W. & Co., and they are owing Thompson & Risley. They draw on us at 30 days from Dec. 20th, making the draft payable to T. & R., and we accept it, thereby promising to pay T. & R. in 30 days, for S. W. & Co., $28.45. (See 182 and 183.) 433 posted to 782. 434 posted to 638.

Ex. 435, 436, and 437.—Porter cannot pay his note, which is now due, therefore renews it for 30 days, giving us a new note for the amount of the old note and interest. When he gives us the new note we surrender to him the old. This, also, may be treated according to the other method described in Ex. 421 to 425. (Lec 124.) 435 posted to 613. 436 posted to 625. 437 posted to 668.

Ex. 438.—Same as 408 to 416.

Ex. 439 and 440.—Dollus is owing us and we are owing Armsby, so we give Armsby a sight draft on Dollus. If sight drafts are not paid when drawn by us on one person payable to another, and are returned to us, we are then obliged to undo the entry we made when the draft was drawn, which would be done by debiting the person on whom we drew, and crediting the person to whom we made the draft payable. (See 179 and 170.) 439 posted to 764. 440 posted to 721.

Ex. 441 and 442.—We hear that Dorman is about to fail; therefore, we make a certified statement of his account, and hand it to our attorney for collection. "What is meant by a certified statement?" A certified statement is an itemized statement of a person's account made out and sworn to by us before a notary public as being "correct, to the best of our knowledge and belief." (See 262 and 264.) 441 posted to 685. 442 posted to 735.

Ex. 443 to 446.—We are owing these different parties. We send Arbuckle and Babbitt notes on 60 and 30 days from the dates of their bills, as indicated in paragraphs 444 and 445; and we accept the draft drawn on us by the Toronto Tobacco Co. at 60 days from Nov. 28th, as indicated in paragraph 443. The entry for these is the same in effect as were the entries in paragraphs 380, 381, and 396, 397, excepting that here we make an entry for several notes, and in those cases, for only one at a time. The items are posted separately on the Bills Payable account for checking purposes. 443 posted to 639, 640, and 641. 444 posted to 755. 445 posted to 758. 446 posted to 748.

Ex. 447, 448, and 449.—Some book-keepers hold the notes they receive several days before entering them, and then enter them all together in the manner here illustrated. Each of the parties is then credited, and Bills Receivable account debited for each item separately. 447 posted to 614 and 615. 448 posted to 727. 449 posted to 731.

Ex. 450 and 451.—Hurto is insolvent, and compromises with his creditors for a settlement in full for sixty cents on the dollar, *i.e.*, each one of his creditors signs a paper which is presented to them agreeing to accept sixty cents on the dollar in full settlement. Hurto then gives us a check for $97.50, which is 60 per cent. (entered on Cash Book—see 500), and the remainder, $65 (40 per cent.), is of course lost. (See 265.) 450 posted to 784. 451 posted to 600.

Ex. 452.—Same as 427 to 430. Posted to 700.

Ex. 453 to 457.—For full instructions and explanations, see latter part of paragraphs 336 and 337; also 201 and 204. 453 posted to 654. 454, 5, 6, and 7 posted to 677, 679, 681, and 683.

Ex. 458 to 463.—Same as 401 to 407. When several bills are bought from a firm on different time, the time on which each is bought is indicated in the manner illustrated in paragraph 460. For example: "$\frac{60}{20.00}$" is Dec. 15, $20.00 on 60 days' time. Posting same as Ex. 401 to 407.

Ex. 464 to 468.—For full instructions and explanations, see paragraphs 266, 270, 271, and 272. Dollus having suddenly "left for parts unknown," we call his account lost. Lyman having recently failed, his note is con-

sidered by us as worthless. Our attorney reports that of the remaining $50 due on Dorman's account, he believes not more than $25 to be collectible, so we carry $25 to Lost Accounts and Notes. 465 posted to 785, 786, and 787. 466 posted to 722. 467 posted to 626. 468 posted to 687.

Ex. 469 and 470.—Having carried forward the Merchandise debit for the entire month, we now post the total amount for the month to debit of the Merchandise account in the Ledger (see 586); and having carried forward the Merchandise credit for the entire month, we now post the total amount for the month to the credit of the Merchandise account in the Ledger. (See 590.)

DR. CASH.

90.

DATE.		L. F.	(All these items are posted to the Credit side of the Ledger.)		MISCELLANEOUS. Cr.		MDSE. Cr.		TOTAL.	
471.		472.	473.	474.	47	5.	47	6.	47	7.
1882.										
485. Dec.	1			Balance on hand (am't invested),					3,000	00
486.	2	√	To Mdse.	Sales,			184	30		
487.	3	√	" "	"			245	34		
488.		41	" Bills Receivable.	Paym't on E. Russell's note, 11-18-82—30 ds.,	50	00				
489.		41	" " "	Disc'ted E. Russell's note, 10-20-82—60 ds.,	200	00				
489½.	4	44	" G. W. Bennett.	C'k.	104	00				
	6	√	" Mdse.	Sales,			213	80		
490.		41	" Bills Receivable.	Disc'ted E. Russell's note, 11-18-82—60 ds.,	100	00				
	8	√	" Mdse.	Sales,			260	42		
	9	√	" "	"			174	20		
491.	10	42	" F'rt and Exp.	O'c. ret'd G. T. R.,	1	24				
	11	√	" Mdse.	Sales,			140	20		
492.	14	44	" F. H. Miller.	He paid our st. d'ft,	84	00				
	15	√	" Mdse.	Sales,			135	80		
493.	17	41	" Bills Receivable.	Paym't on H. Smith's note, 11-14-82—30 ds.,	500	00				
494.		42	" Interest.	On above note ($1,000) to date,	7	33				
	18	√	" Mdse.	Sales,			209	60		
	20	√	" "	"			167	35		
495.		41	" Bills Receivable.	Disc'ted G.W. Bennett's note, 12-3-82—90 ds.,	200	00				
496.		42	" Interest.	On above,		70				
497.	23	44	" G. W. Bennett.		32	19				
498.		45	" D. Cameron.		42	00				
	24	√	" Mdse.	Sales,			183	45		
	25	√	" "	"			49	58		
499.		45	" H. S. Cole,		6	40				
500.	27	43	" Sam. Hurto.	Sixty cents on the dollar of claim ($162 50),	97	50				
	28	√	" Mdse.	Sales,			114	40		
501.		45	" L. S. & M. S. R'y,		1	00				
502.		42	" F'rt and Exp.	O'c. ret'd C. R. I. & P.,		55				
	29	√	" Mdse.	Sales,			167	45		
503.		45	" B. Goodwin, jr.,		5	65				
504.		43	" H. L. Richardson,	Att'y. Coll. on W. Dorman's acc't,	50	00				
	30	√	" Mdse.	Sales,			137	80		
	31	√	" "	"			152	50		
505.		41	" Bills Payable.	Borrowed from W. Teele on note, 30 ds.—12-31 82,	250	00				
547.		40	To Mdse.	Total for Dec., 1882,	2,536	10				
548.				Total cash rec'd,					4,268	81
549.									7,268	81
1883.										
554. Jan.	1			Balance on hand,					3,776	50

CASH. CR.

91.

DATE.		L. F.	(All these items are posted to the Debit side of the Ledger.)		MISCELLANEOUS. Dr.		EXPENSE. Dr.		TOTAL.	
478.		479.	480.	481.	48	2.	48	3.	48	4.
1882.										
506. Dec.	1	✓	By Expense.	Rent of Store to 1-1-83,			75	00		
507.		✓	" "	Set Blank Books, 20.40; Stationery bill, 7.20,			33	60		
508.	3	42	" Insurance	Policy, $3,000, "Ætna," 1 pr cent.,	30	00				
509.		42	" Interest.	Dis. on E. Russell's note, 10-20-82—60 ds.,		85				
510.	4	40	" J. H. Goodwin.	On acc't,	10	00				
511.		41	" Store and O. Fixt.	New Counter,	13	50				
		✓	" Expense.	Ink, 75c.; Pens $1; Eraser, 50c,			2	25		
512.	6	42	" Interest.	Dis. on Russell's note, 11-18—60 ds.,	1	00				
513.		40	" S. A. Emerson.	On acc't,	15	00				
514.		41	" Store and O. Fixt.	New Desk, 30.00; Chair, 5.00,	35	00				
515.	7	42	" F'rt and Exp.	L. S. & M. S., 12.20; G. T. R. and H. R., 7.14,	19	34				
516.		42	" Salaries.	F. Mast, 10.00; H. Smith, 3.75,	13	75				
		42	" "	J. Kinsella, 10.00; M. W. Saxton, 12.50,	22	50				
517.	9	43	" Union Trust Co.	Shares. 5 Shares,	500	00				
518.	10	✓	" Expense.	Sign—"Goodwin & Emerson,"			18	60		
519.		40	" Mdse.	40 bu. Potatoes, 50c.,	20	00				
520.	11	42	" F'rt and Exp.	C. R. I. and P., 6.20; Dray, 50c.; Express, 1.00.	7	70				
521.	13	45	" Toronto Tobacco Co.	Scnt D'ft,	340	40				
522.	14	42	" Salaries.	Kinsella, 10.00; Saxton, 12.50,	22	50				
		42	" "	Smith, 3.75; Mast, 10.00,	13	75				
523.		42	" Coll. and Exch.	Coll. D'ft on Miller,		25				
524.	16	41	" Bills Payable.	Paid Acc. Arbuckle Bros. of 11-13-82—30 ds.,	640	00				
525.		42	" Coll. and Exch.	On above,		65				
526.	17	43	" Advertising.	5 M Circulars, 4.00; *Mail* bill, 12.00,	16	00				
527.	18	45	" Baker & Co.	Paid D'ft 12-13-82,	280	00				
528.		42	" Coll. and Exch.	On above,		30				
529.	20	✓	" Expense.	5 tons Range Coal, 5.00,			25	00		
530.	22	41	" Bills Receivable.	Took up in B'k E. Russell's note of 10-20-82—60 ds.,	200	00				
531.		41	" Bills Payable.	Sent D'ft for note, Thurber & Co., 10-22-82—60 ds.,	500	00				
532.		42	" Interest.	On above note,	5	25				
533.	23	42	" Coll. and Exch.	On above d'ft,		50				
		42	" F'rt and Exp.	Dray, 1.00; C. and N.W., 3.20,	4	20				
534.		40	" Mdse.	Dis. Bennett, 64c.; Cameron, 84c.,	1	48				
535.	24	43	" F. P. Mast	On acc't,	12	00				
536.		40	" S. A. Emerson.	On acc't,	325	00				
537.		43	" Herman Smith.	"	5	00				
		41	" Store and O. Fixt.	Show Case,	20	00				
538.	27	✓	" Expense.	2 M Statements, 4.00; Letter and Bill Hds, 5.20,			9	20		
539.		43	" Jas. Kinsella.	On acc't,	15	00				
540.		40	" J. H. Goodwin.	"	40	00				
541.	28	40	" " "	Paid bill Shoes,	12	00				
542.		41	" Bills Receivable.	Loaned J. Huggins on note, 60 ds., 12-27-83,	100	00				
543.	29	41	" Bills Payable.	Paid on note Taylor's Safe and Lock Co., 12-13-82—30 ds.,	50	00				
544.	30	46	" J. K. Armsby & Co.	On acc't, C'k,	28	94				
545.	31	✓	" Expense.	Gas bill O. and E.,			5	40		
546.		40	" S. A. Emerson.	Gas bill,	2	00				
550.		42	" Expense.	Total for the month,	168	45				
551.				Total cash paid,					3,402	31
552.				Balance on hand,					3,776	50
553.									7,268	81

EXPLANATION OF THE CASH BOOK ENTRIES ON THE TWO PRECEDING PAGES.

THE COLUMNS.

As indicated at the top of the respective columns, 471 and 478 are the "Date" columns; 472 and 479 are the "L. F.," or "Posting" columns, in which to write the Ledger page to which an item is posted.

Ex. 475.—This the "Miscellaneous," or "General" column, in which is entered all *cash received* (except for cash sales of merchandise),—all items entered in this column are *credited* to the respective accounts indicated under 473. (See 13, 43, and 45.)

Ex. 476.—This is an extra column kept in which to enter the merchandise cash sales. The object in thus extending the cash sales into this column is to save labour in posting; for by so doing, it is necessary to post the Merchandise cash sales only once a month,—crediting Mdse. at the end of the month for the total sales for the month, as shown by the total of this column. (See 547.) When the Cash Book is closed daily, this column cannot be used,—then the cash sales items are entered in the "Miscellaneous" column, and we are obliged to post the same to the Merchandise account daily.

Ex. 477.—This is the "footing," or "total" column, into which is extended the balance of cash on hand in the morning, and the total received during the day, at night. (See 485 and 548.)

Ex. 482.—This is the "Miscellaneous," or "General" column, in which is entered all *cash paid out* (except for items belonging to the Expense account),—all items entered in this column are debited to the respective accounts indicated under 480. (See 13, 44, and 46.)

Ex. 483.—This is an extra column kept, in which to extend all items to be debited to the Expense account. This is kept for the same reason that any extra column is kept—to save labour in posting,—the total of this column being posted to the debit of the Expense account at the end of the month. (See 550.) When the Cash Book is closed daily, it is scarcely advisable to keep this extra column, as there are seldom enough entries to the Expense account to pay for keeping it,—the Expense items are then entered in the column with the miscellaneous items, and posted daily to the Expense account.

Ex. 484.—This is the credit "footing" or "total" column, into which is extended, every night, the total amount of cash paid out during the

day, and the balance of cash remaining on hand at night. (See 551 and 552.)

Ex. 473 and 474.—When we receive cash, we write the name of the account we are going to *credit* for that amount under 473, and if any explanation be required, we write it in as few words as possible under 474.

Ex. 480 and 481.—When we pay out cash, we write the name of the account we are going to *debit* for that amount under 480; and if any explanation be required, we write it in as few words as possible under 481.

THE ENTRIES.—DEBIT SIDE.

Ex. 485.—When the Cash Book is closed daily, we bring down on the debit side, each morning, the amount of cash on hand for the beginning of the day's business in the manner here illustrated, always extending the amount into the outer column.

Ex. 486 and 487.—No entry is made of the cash sales in the Cash Book until the close of the day, and then Merchandise is credited for the total sales of the day in one entry, as here shown. When an extra column is kept, it is advisable to make a check in the "L. F." column opposite all items for that column, so as to leave no blank lines whereby the eye might be confused in posting.

Ex. 488.—Russell pays us $50 on his 30-days' note of Nov. 18th, which amount we endorse on the note. (See 109.) Posted to 618.

Ex. 489.—If we are in need of money, we take a note to the bank and get it discounted,—the entry is then made in this manner. This note is made *without interest*, so the bank deducts 85 cents (see 509) and hands us the balance, or gives us credit in our bank book, for the same. They deduct the discount at a certain per cent. per annum for the time the note has yet to run before due—in this case 8 per cent. for 19 days. We must in all such cases credit Bills Receivable for the full face of the note, and debit Interest on the opposite side of the Cash Book for the discount. (See 110, 125, 146, and 153.) 489 posted to 619.

Ex. 489½.—Bennett gives us a check on the bank as part payment for his account. (See 169, 80, and 81.) Posted to 695.

Ex. 490 and 512.—Same as 489 and 509. Posted to 620.

Ex. 491.—The G. T. R. and H. R. Ry. Co. return this amount of overcharge on a freight bill of recent date. As we made no charge on the Journal at the time we claimed this overcharge, we now credit it to Freight and Express. (See 206.) Posted to 650.

Ex. 492.—On the 6th instant we draw on Miller at sight, through our bank, for the amount of his account. Our bank this day advises us that the draft is paid, and enters in our bank book the amount to our credit. We now add this to the amount we have on deposit in the bank on the stub of our check-book, which is the same in effect as making a deposit of that amount. (See 170, 74, and 143.) Posted to 703.

Ex. 493 and 494.—The note which Smith gave to Emerson on Nov. 14th, at 30 days, for $1,000, and was by Emerson endorsed over to the firm on Dec. 1st, is now due. Smith is unable to pay more than $500 and the interest accrued to date—$7.33; he therefore wishes to renew the remaining $500 for 15 days. He pays $507.33 cash, which is entered in the manner indicated in 493 and 494, and then writes a new note for $500 at 15 days, gets the same person he had on the old note to endorse for him, and hands this note to us; we then surrender the old note. No entry need be made for the new note; but it may be allowed to appear in the books as so much still remaining unpaid on the old note,—the only record of the renewal being made in the Bills Receivable and Bills Payable Book. [See 124 and 153.) Posted to 622 and 665. The object in taking a new note instead of endorsing the payment on the back and holding the old note, is in order that we may use the new, to get it discounted if we wish.

Ex. 495 and 496.—This note is made *with interest*, and as the rate per cent. is satisfactory to the bank, instead of deducting a discount, they allow us for the interest which has already accrued on the note to date, and give us credit for the face of the note—$200—and this accrued interest—76 cents. The interest is in this case calculated from the date of the note to the time it is discounted,—from Dec. 3rd to Dec. 20th—17 days. (See 125.) Posted to 623 and 666.

Ex. 497, 498, and 534.—We sold Bennett and Cameron goods on Dec. 17th and 21st, on terms 60 days, or 2 per cent. off for cash within 6 days, On Dec. 23rd, they deduct 2 per cent. from their bills, and pay us the balance. We give them credit for the full amount of the bills, and debit Merchandise on the opposite page. (See 534 and 74.) 497 and 498 posted to 699 and 746.

Ex. 499.—Cole pays us the amount due, and, as his is a petty account, it is treated in the manner described in paragraph 327. Posted to 744.

Ex. 500.—This is the amount we received from Hurto when we compromised with him for a full settlement at 60 cents on the dollar. (See 450, 451.) Posted to 689.

Ex, 501.—They pay the amount of our claim against them. (See 393-394.) Posted to 743.

Ex. 502.—Same as 491. Posted to 650.

Ex. 503.—Same as 499. Posted to 745.

Ex. 504.—Our attorney makes a collection on Dorman's account, and hands the same over to us. (See 263.) Posted to 686.

Ex. 505.—When we borrow money, and immediately give our note for the same, the entry is made in the manner here illustrated. Posted to 642.

CREDIT SIDE.

Ex. 506.—We give our landlord a check for the month's rent of our store. A "Rent" account is sometimes kept, so as to show how much has been expended during the year for rent; but in this case it is carried into the Expense account. (See 190 and 194.) All items we wish charged to the Expense account we extend into the "Expense Dr." column, and at the end of the month post the total for the month in one entry. (See Ex. 483.)

Ex. 507.—We buy a set of blank books, some letter paper, envelopes, etc.

Ex. 508.—We procure $3,000 insurance on our stock of goods and fixtures in the Ætna Insurance Co., and pay 1 per cent. premium on the policy. (See 187 and 188.) Posted to 656.

Ex. 509.—See Ex. 488. Posted to 660.

Ex. 510.—Goodwin draws $10 for his private use. (See 57.) Posted to 571. It is not necessary to add "Private account" after this name, as it is so understood.

Ex. 511.—We have a new counter made, and pay cash therefor. (See 93.) Posted to 593.

Ex. 512.—See Ex. 490. Posted to 661.

Ex. 513.—Emerson draws $15 for his private use. (Same as 510.) Posted to 576.

Ex. 514.—We buy a new desk and chair for our office use. Posted to 594.

Ex. 515.—We pay these freight bills. There is an overcharge on each, —the overcharge on the former we charge on the Journal (see 393); on the latter we simply make a memorandum of the claim, as we are not certain whether or not it will be allowed. It is, however, paid on the 10th inst. (See 491.) Posted to 649.

Ex. 516.—It is the end of the week, and we pay our employés the amount due to each. (See latter part of paragraph 336.) Posted to 652.

Ex. 517.—We purchase five bank shares of the Union Trust Co. stock. We buy these because we have money to spare, and think it a good investment as this bank declares a semi-annual dividend to its shareholders, the per cent. of which amounts to more than our money would bring if put out on interest. When we receive cash on a dividend we open a "Union Trust Co. Dividend" account, and credit that account for the amount of the dividend; which "Dividend" account is closed at the end of the year and the amount carried to the Loss & Gain account as a Gain. Posted to 676.

Ex. 518.—We have a sign made to put up over our door. Some bookkeepers erroneously charge this to Store Fixtures account. Nothing should be charged to Store Fixtures account except such articles as would be of value to others.

Ex. 519.—We buy potatoes from a farmer and pay cash therefor. Everything we buy for the purpose of selling again, we debit to Merchandise account. Posted to 585.

Ex. 520.—We pay for freight and drayage, also for express on a box of goods. (See 205.) A separate account is sometimes kept for Drayage, but in this set it is carried into the Freight and Express account. Posted to 649.

Ex. 521.—We go to the bank and buy a draft (bank draft) on New York and send it to the Toronto Tobacco Co. (See 179.) Posted to 747.

Ex. 522.—Same as 516. (See 201 and 203.) Posted to 653. In a store where there are but few employés it is not necessary to write the initials when making the entry.

Ex. 523.—The bank charges us 25 cents for collecting our sight draft on F. H. Miller. (See 492 and 209.) Posted to 669.

Ex. 524 and 525.—The time draft which Arbuckle Bros. drew on Goodwin Nov. 13th, and was by him accepted, is now due, and is sent by them through the bank for collection. The bank presents it to us for payment, and we pay it, together with 65 cents exchange and collection charges. (See 361 and 134.) Posted to 629 and 670.

Ex. 526.—We pay for circulars, and for advertisement in *Mail*,—desiring to know how much is expended during the year for advertising, we keep an Advertising account and charge the amount to that account. Posted to 674.

Ex. 527 and 528. Baker & Co., of New York, draw on us "at sight," on Dec. 13th, for the amount of their account, the draft reaches us on the

15th, is "accepted," and after three days of grace is now due. We pay it, together with 30 cents exchange. (See 180 and 143.) Posted to 752 and 671.

Ex. 529.—We buy coal for our own use in the store, and as we keep no Fuel account, the amount is charged to Expense. (See 189 and 194.)

Ex. 530.—Russell's note, dated Oct. 20th, at 60 days, is now due and he is unable to pay it. We discounted it in the bank on the 3rd inst. (see 489), and we are now obliged to take it up. This note was made without interest; if it had been made with interest, we would be obliged to pay the bank the face of the note *plus* the interest; we would then debit Bills receivable for the face of the note and Interest for the amount of accrued interest. (See 126.) Posted to 612.

Ex. 531, 532 and 533.—The note Goodwin gave to Thurbur & Co., dated Oct. 22nd, at 60 days, will be due on the 24th inst., and as it is made payable at their office in New York, we this day buy a bank draft for $505.25, for the face of the note and interest, (the note was made *with interest,*) and send it to them so it will reach them on the day the note is due. We pay exchange on the draft, 50 cents. (See 362, 134, 144 and 209.) Posted to 630, 662 and 672.

Ex 534.—See Ex. 497 and 498. Posted to 585.

Ex. 535, 537 and 539.—These employés draw money on their accounts. (See 204 and latter part of paragraph 337.) Posted to 680, 682 and 678.

Ex. 536 and 540.—Emerson and Goodwin draw money for their private use. Posted to 580 and 572.

Ex. 541.—Goodwin instructs the book-keeper to pay for a pair of shoes which the shoemaker brings in with a bill for same. The shoes are for Goodwin's private use, therefore the amount is charged to his account. Posted to 573.

Ex. 542.—We loan J. Huggins, on his note at 60 days, with interest at 8 per cent., $100. (See 108.) Posted to 616.

Ex. 543.—We make a payment of $50 on the note we gave to the H. S. & L. Co. We debit Bills Payable for the amount of that payment, which amount is by them endorsed on the note. (See 134.) Posted to 631.

Ex. 544.—We give Armsby a check on our bank for the balance of his account. (See 179.) Posted to 765.

Ex. 546.—We pay for Emerson his private gas bill. Posted to 581.

CLOSING THE CASH BOOK.

Ex. 547.—It is now the end of the month, and we wish to close or balance the Cash Book. *First.*—Find the total of the "Mdse. Cr." column,

then bring that total into the "Miscellaneous Cr." column, which amount is the total sales for the month.

Ex. 548.—*Second.*—Find the total of the "Miscellaneous Cr." column, (including the Mdse. Cr. amount) the amount of which is the *total cash received* during the month, and this amount is then extended into the "Total" column.

Ex. 549.—*Third.*—Add the amount on hand at the beginning of the month, $3,000, and the total received which gives the *total Cash debit.*

Ex. 550.—*Fourth.*—Find the total of the "Expense Dr." column and bring the total into the "Miscellaneous Dr." column.

Ex. 551.—*Fifth.*—Find the total of the "Miscellaneous Dr." column, which amount is the total cash paid out during the month, or *total Cash credit.*

Ex. 552.—*Sixth.*—Find the difference between the total Cash credit (551), and the total Cash debit (549), which difference is the balance of cash remaining on hand. Now write, in red ink, "Balance on hand" and extend the amount into the "Total" column under the total amount paid out.

Ex. 553.—*Seventh.*—Add the total paid (551), and the balance now on hand (552), and place the total below (553), which total should just agree with the total on the opposite side of the Cash Book.

RULING.—The red lines should first be ruled in the manner here illustrated. The double red lines should always extend across both pages on the same line; therefore we always rule first the page that extends the lowest down, then rule the opposite page to correspond.

Ex. 554.—After the Cash Book has thus been balanced, we bring down on the debit side of the book the balance of cash on hand for the beginning of the new month. We then proceed in the same manner as in the preceding month. 547 posted to 589. 550 posted to 645.

REMARKS.—When there are a great many entries in the Cash Book every day, it is advisable to balance it daily; then the extra columns, "Mdse. Cr." and "Expense Dr." could not be used. When they are not used, there are but two money columns on each side of the Cash Book,—in reality, a common Journal ruling. The items that are here entered in the extra colums would then be entered in the inner, or general column, and the book would be otherwise treated the same as though these columns were here stricken out—the Mdse. and Expense items being posted to their respective accounts the same as the other items.

LEDGER.

40. J. H. Goodwin—Stock Account.

555.		556.	557.	558.		559.		560.	561.	562.	
1882.						1882.					
563. Dec.	31	To Balance,	40	3,571	31	564. Dec.	1	Net Investment,	62	3,500	00
						565.	31	By Net Private Gain,	40	71	31
				3,571	31					3,571	31
						1883.					
						566. Jan.	1	By Present Worth,	40	3,571	31

S. A. Emerson—Stock Account.

1882.						1882.					
567. Dec.	31	To S. A. E. Priv'te acc't: net loss,	40	217	21	569. Dec.	1				
568.	31	To Balance,	40	3,282	79			Net Investment,	62	3,500	00
				3,500	00					3,500	00
						1883.					
						570. Jan.	1	Present Worth,	40	3,282	79

J. H. Goodwin—Private Account.

1882.						1882.					
571. Dec.	4		91	10	00	575. Dec.	31	By ½ Net Gain,	47	133	31
572.	27		91	40	00						
573.	28	Shoes,	91	12	00						
				02	00						
574.	31	To J. H. Goodwin, Stock acc't,	40	11	31						
				133	31					133	31

S. A. Emerson—Private Account.

1882.						1882.					
576. Dec.	6		91	15	00	582. Dec.	31	By ½ Net Gain,	47	133	31
577.	14	M.	63	2	55	583.	31	By S. A. Emerson,			
578.	17	"	63	2	85			Stock acc't,	40	217	21
579.	21	"	63	3	12						
580.	24		91	325	00						
581.	31	Gas bill,	91	2	00						
				350	52						
				350	52					350	52

Merchandise.

1882.						1882.					
584. Dec.	1	To Inventory,	62	3,376	40	589. Dec.	31	Cash Sales,	00	2,536	19
585.	10	20.00; 1.48, 23		21	48	590.	31	Jour. "	65	506	99
										3,043	18
586.	31	Journal, 1 427.25	65	1,072	55	591.	31	By Inventory,		2,212	40
				4,470	43						
587.	31	To Loss and Gain,	47	785	15						
				5,255	58					5,255	58
1883.											
588. Jan.	1	To Inventory,		2,212	40						

LEDGER.

41. STORE AND OFFICE FIXTURES.

1882.							1882.				
592. Dec.	1	To Inventory,	62	130	00	599. Dec	31	By Inventory,		338	00
593.	4		91	13	50	600.	31	By Loss and Gain,	47	14	50
594.	0		91	35	00						
595.	13		63	150	00						
596.	15		63	4	00						
597.	24		91	20	00						
				352	50					352	50
1883.											
598. Jan.	1	To Inventory,		338	00						

BILLS RECEIVABLE.

601.											
1882.							1882.				
602. Dec.	1	Russell, 11-30	62	200		618. Dec.	3	Russell, 11-30, P.	90	50	00
603.		" 11-60	62	100		619.	3	" 10-60, D.	90	200	00
604.		" 10-60	62	200		620.	6	" 11-60, D.	90	100	00
605.		Porter, 11-30	62	240		621.	17	Fisher, 10 60, H. L. R.			
606.		Fisher, 10-60	62	100				Att'y,	63	100	00
607.		H. Smith, 11-30	62	1000		622.		H. Smith, 10-60, P.	90	500	00
608.	4	Bennett, 12-90	62	2 0		623.	20	Bennett, 12-90, D.	90	200	00
609.	11	Richardson, 90	63	190		624.	21	Russell, 11-30, R.	64	150	00
610.	21	Russell, 30	64	100		625.	23	Porter, 11-30, R.	64	240	00
611.		" 00	64	78	23	626.	31	Lyman's called lost,	65	20	94
612.	22	" 10-60, T. up	91	200						1560	94
613.	23	Porter, 12-60	64	241	76	627.	31	By Balance,	41	1449	02
614.	27	Burgess, 60	64	29	03						
615.		Lyman, 30	64	20	94						
616	28	Huggins, 30	91	100							
		1449 02		3009	06						
				3009	06					3009	96
1883.											
617. Jan.	1	Bal.	41	1449	02						

BILLS PAYABLE.

628.											
1882.							1882.				
629. Dec.	16	Arbuckle, 11-30	91	640	00	633. Dec	1	Arbuckle, 11-30	62	640	00
630.	22	Ehurber, 10-60	91	500	00	634.	1	Thurber, 10-60	62	500	00
631.	29	Taylor's S. & L.				635.	5	Arbuckle, 12-60	62	218	60
		Co., 12-30	91	50	00	636.	13	Taylor's S. & L.			
				1190	00			Co., 30	63	150	00
632.	31	Bal.	41	1062	04	637.	14	Procter & G., 60	63	189	30
						638.	23	Sprague, 30	64	23	45
						639.	25	Arbuckle, 60	64	146	00
						640.		Babbitt, 30	64	65	50
						641.		Tor. Tob. Co., 11-60	64	64	19
						642.	31	Teele, 12-30	90	250	00
				2252	04			1062 04		2252	04
										2252	04
						1883.					
						643. Jan.	1	Bal.	41	1062	04

LEDGER.

42. EXPENSE.

1882.						1882.					
644. Dec.	1	To Inventory,	62	20	00	647. Dec.	31	By Inventory,		15	00
645.	31		91	168	45	648.	31	" Loss and Gain,	47	173	45
				188	45					188	45
				188	45						
1883.											
646. Jan.	1	To Inventory,		15	00						
			FREIGHT AND EXPRESS.								
1882.						1882.					
649. Dec.	7	19.34, 7.70, 4.20, 11 23 28.45		31	24	650. Dec.	10	1.24, 1.00, 55c., 13 28		2	79
						651.	31	By Loss and Gain,	47	28	45
				31	24					31	24
			SALARIES.								
1882.						1882.					
652. Dec.	7		91	36	25	655. Dec.	31	By Loss and Gain,	47	145	00
653.	14		91	36	25						
654.	31		65	72	50						
				145	00						
				145	00					145	00
			INSURANCE.								
1882.						1882.					
656. Dec.	3	"Ætna,"	91	30	00	658. Dec.	31	By Inventory,		27	50
						659.	31	" Loss and Gain,	47	2	50
				30	00					30	00
1883.											
657. Jan.	1	To Inventory,		27	50						
			INTEREST.								
1882.						1882.					
660. Dec.	3		91		85	664 Dec.	8		62	2	50
661.	6		91	1	00	665.	17		90	7	34
662.	22		91	5	25	666.	20		90		76
				7	10	667.	21		64	1	27
663.		To Loss and Gain,	47	6	52	668.	23		64	1	76
				13	62				6.52	13	62
										13	62
			COLLECTION AND EXCHANGE.								
1882.											
669. Dec.	14		91		25	673.	31	By Loss and Gain,	47	1	70
670.	16		91		65						
671.	18		91		30						
672.	23		91		50						
				1	70						
				1	70					1	70

EXPLANATION OF THE LEDGER.

THE COLUMNS.

Ex. 555 and 559.—These are the date columns. The dates entered herein are taken from the Journal and Cash Book, or whatever books we post from.

Ex. 556 and 560.—These are the "explanation columns" referred to in 323 and 324.

Ex. 557 and 561.—These are the columns in which we indicate the Journal or Cash Book pages from which a transaction is posted or transferred. By thus entering on an account the Journal or Cash Book page upon which a transaction may be found recorded in detail, it is not necessary to write any explanations on this book, excepting the few instances that will be noticed on the accounts herein.

Ex. 558 and 562.—These are the debit and credit money columns.

Now read Par. 15 *to* 19; also 321 to 330.

THE ACCOUNTS.

Ex. 563 to 570.—See 49 to 56. (This set of books is closed according to Closing No. 1.) It will be seen that Goodwin has a net private gain, while Emerson has a net private loss: thus illustrating to the student the different ways of treating the Stock accounts in such cases.

Ex. 571 to 583.—See 57 to 65. It will be seen in 575 and 582 that each of the partners is credited with equal shares of the net business gain. Goodwin has drawn less (571, 2 and 3) for his private use than his net business gains amounted to, therefore he has a *net private gain* (See 62). It does not matter whether or not a salary is allowed—the account is treated the same, as will be seen in this case where none is allowed. Emerson has drawn more for his private use than his net business gain amounted to, therefore his is a *net private loss.* (See 63.)

Ex. 584 to 591.—See 66 to 74.

Ex. 591 to 600.—See 92 to 96.

Ex. 601 to 628.—See 322. In business colleges 601 is the style of ruling that is used under the Ledger headings. Some book-keepers also use this; but if any ruling is used the style under "Bills Payable (628) is recommended, as it requires less time to rule it and is not so "fussy." These rulings are used here simply to show the different styles.

Ex. 602 to 627.—See 107 to 128. Some book-keepers do not insert the two ciphers in the "cents" column in their books when there are no cents

THE LEDGER.

ADVERTISING.

1882. 674. Dec.	17		91	16		1882. 675. Dec.	31	By Loss & Gain,	47	16	00
		UNION TRUST CO. SHARES.									
1882. 676. Dec.	9	5 Shares,	91	500	00						
		M. W. SAXTON — (SALARY $50 Mo.)									
						1882. 677. Dec.	31	Mo. Dec.,	65	25	00
		JAMES KINSELLA — (SALARY $40 Mo.)									
1882. 678. Dec.	27		91	15	00	1882. 679. Dec.	31	Mo. Dec., 5 00	65	20	00
		FRANK P. MAST — (SALARY $40 Mo.)									
1882. 680. Dec.	24		91	12	00	1882. 681. Dec.	31	Mo. Dec., 8 00	65	20	00
		HERMAN SMITH — (SALARY $15 Mo.)									
1882. 682. Dec.	24		91	5	00	1882. 683. Dec.	31	Mo. Dec., 2 50	65	7	50
		H. L. RICHARDSON, BARRISTER.									
1882. 684. Dec.	17	S. A. Fisher's Note,	63	100	00	1882. 686. Dec.	29	Dorman acc't,	00	50	00
685.	24	Wm. Dorman acc't, 125 00	64	100 200	00 00	687.	31	" called worthless	65	25 75	00 00
		SAM HURTO, 198 KING STREET.									
1882. 688. Dec.	1	Balance,	62	162	50	1882. 689. Dec.	27	60 per ct. cash,	90	97	50
						690.	"	Lost A.& N. 40 per c.	65	65	00
										162	50
				162	50					162	50

LEDGER.

44 GEORGE W. BENNETT.—PORTAGE LA PRAIRIE.

1882.						1882.						
691. Dec.	1	Balance,	62	304	00	695. Dec.	4		90	104	00
692.	17		63	32	19	696.	4	Note, 90 ds.	62	200	00
693.	21		64	23	12	697.	21	M.	64		50
694.		202		359	31	698.	23	Borcland's Order.	64	20	00
						699.	23		90	32	19
						700.	28	M.	64		00
						701.				357	26

F. H. MILLER.—KINGSTON.

1882.						1882.						
702. Dec.	1	Bal.	62	84	00	703. Dec.	14		90	84	00

FRANK RICHARDSON.—OTTAWA.

1882.						1882.						
704. Dec.	1	Bal.	62	187	50	706. Dec.	11	Acc. 90 ds 12-8,	63	190	00
705.	8	Int.	62	2	50						
				190	00						

EDWARD RUSSELL.—85 SO. ROBEY ST.

1882.						1882.						
707. Dec.	2		62	4	10	710. Dec.	5	M.	62		20
708.	10		63	10	80	711.	9	M.	63	16	00
709.	17		63	42	86	712.	18	Cheese—Armsby.	63	14	60
				57	76	713.	21	Bal. note, 12-21-60.	64	26	96
										57	76

ALEX. DOLLUS.—416 WELLINGTON ST.

1882.						1882.						
714. Dec.	2		62	12	00	719. Dec.	5	M.	62	1	25
715.	4		62	3	55	720.	21	M.	64		60
716.	17		63	22	40	721.	24	St. Dft. to Armsby.	64	50	00
717.	21		64	34	96	722.	31	Called worthless.	65	32	51
718.	24		64	11	45						
				84	36					84	36
				84	36					84	36

FRANK BURGESS.—26 YONGE ST.

1882.						1882.						
723.	13		63	7	35	726. Dec.	15	Making Shelves.	63	4	00
724.	17		63	7	23	727.	25	Note 60 ds.	65	39	03
725.	21		64	28	45					43	03
				43	03						

LEDGER.

45 W. C. LYMAN.—73 FRONT STREET.

1882.						1882.					
728. Dec.	21		64	14	80	730. Dec.	21	M.	64	1	00
729.	24		64	7	14	731.	27	Note 30 ds,	64	20	94
				21	94					21	94
				21	94					21	94

T. W. KEENE.—320 CHURCH ST.

1882.											
732. Dec.	21										
733.	24		64	45	12						
			64	12	00						
				57	12						

WM. DORMAN.—64 PARK AVE.

1882.						1882.					
734. Dec.	17		63	100	00	735. Dec.	28	Acct to H. L. Richardson, Br'str,	64	100	00

PETTY ACCOUNTS.

1882.						1882.					
736. Dec.	13	L. S. & M. S. R'y.	63	1	00	743. Dec.	28	Paid,	90	1	00
737.	17	Buck, R. N.,	63	9	60						
738.	17	Cole, H. S.,	63	6	40	744. Dec.	25	Paid,	90	6	40
739.	21	Piper, Adolph,	64	4	20						
740.	21	Dickinson, H. M.,	64	3	10						
741.	21	Goodwin, B, Jr.,	64	5	65	745. Dec.	29	Paid,	90	5	65
742.	21	Cameron, D.,	64	42	00	746. Dec.	23	Paid,	90	42	00

TORONTO TOBACCO CO.—TORONTO.

1882.						1882.					
747. Dec.	13		91	340	40	749. Dec.	1	Bal.,	62	340	40
748.	25	Acc't D'ft,	94	64	19	750.	15	11-23, 60,	63	64	19
				404	59					404	59

SAMUEL CUPPLES & CO.—QUEBEC.

						1882.					
						751. Dec.	1	Bal.,	62	344	00

BAKER & CO.—NEW YORK.

1882.						1882.					
752. Dec.	18		91	280	00	753. Dec.	1	Bal.	62	280	00

LEDGER.

46. ARBUCKLE BROS.—MONTREAL.

1882.							1882.						
754. Dec.	8	Acc't D'ft,	62	218	60		756. Dec.	3	60.		63	218	60
755.	25	Note,	64	146	00		757.	18	60.		65	146	00
				364	60							364	60
		B. T. BABBITT.—NEW YORK.											
1882.							1882.						
758. Dec.	25	Note,	64	65	50		759. Dec.	6	30,		63	120	00
							760.	14	30,	120.00	65	65	50
		R. & J. CAMPBELL.—WHITBY.											
1882.							1882.						
761. Dec.	14	Note,	63	189	30		762. Dec	8	60,		65	189	30
		J. K. ARMSBY & Co.											
1882.							1882.						
763. Dec.	18	Russell's Cheese,	63	14	60		766. Dec.	2			63	14	00
764.	24	D'ft on Dollus,	64	50	00		767.	13			63	6	25
765.	30		91	28	94		768.	15	60,		65	20	00
				93	54		769.	17	30,		65	14	30
							770.	18	60,		65	12	90
							771.	20			65	5	40
							772.	23			65	2	79
							773.	27			65	11	60
							774.	29			65	6	70
												93	54
		GEO. W. BORLAND & Co.											
1882.							1882.						
775. Dec.	5	M.,	62	5	00		778. Dec.	2			63	28	40
776.	15	"	63	3	00		779.	14			63	17	85
777.	23	Order on Bennett,	23	20	00		780.	17			65	12	00
				28	00		781.	28			65	7	40
										37.65		65	65
		SPRAGUE, WARNER & Co.											
1882.							1882.						
782. Dec.	23	Acc't D'ft,	64	23	45		783. Dec.	7			63	89	62
										61.17			

LEDGER.

47. Lost Accounts and Notes.

1882.						1882.					
784. Dec.	27	Sam. Hurto,	64	65	00	788. Dec.	31	By Loss and Gain,	47	143	
785.	31	Alex. Dollus,	65	32	51						
786.		W. C. Lyman, Note,	65	20	94						
787.		W. Dorman, Acc't,	65	25	00						
				143	45						
				143	45					143	45

Loss and Gain.

1882.						1882.					
789. Dec.	31	To Store and O. Fixtures,	40	14	50	799. Dec	31	By Mdse.	40	785	15
790.		To Expense,	41	173	45	800.		" Interest,	41	6	52
791.		" Fr't and Express,	41	28	45						
792.		" Salaries,	41	145	00						
793.		" Insurance,	41	2	50						
794.		" Coll. and Exch.,	41	1	70						
795.		" Advertising,	41	16	00						
796		" Lost Accounts & Notes,	43	143	45						
797.		" J. H. Goodwin, Private Acc't,	40	133	31						
798.		" S. A. Emerson, Private Acc't,	40	133	31						
				802.						804.	
				791	67					791	67
801.			803.						805.		

but leave the column blank as has been done in this Bills Receivable account. When an item is posted to this account, do not write in that formal business-college way "To Ed. Russell" when a note is received, or "By Cash" when it is paid; but simply write as in 602 and 618 the person's surname (Russell), the month in which the note is dated, (11th or Nov.) the number of days upon which it is drawn (30), the page (62), and the amount ($200). And when a payment is made on this note, write on the credit side of the account when the item is posted, the name, month, days, page and amount, the same as on the debit side—adding after the days "P.," "D." or "R.," so that we may know whether "Payment," "Discounted," or "Renewed." This is all done simply for checking purposes, in case that the difference between the two sides of the account should not agree with the total value of the notes we actually have on hand. (See 128.) For explanation of 626, see 271.

Ex. 629 to 643.—See 129 to 140. The explanation columns are treated in this account in the same manner and for the same purpose that they are treated in the Bills Receivable account,—the names, etc., being entered simply for checking purposes. (See 139.) It is not neccessary to *ditto* the month in the explanation column but to allow it to stand until changed as in 635 to 641. The Bills Receivable and Bills Payable accounts are usually balanced in the manner here illustrated only when the page is full and we wish to transfer the account to a new page, excepting at the end of the year, at which time it is customary to close them and bring down the balances in this manner. (See 308.)

Ex. 644 to 648.—See 189 to 197.

Ex. 649 to 651.—See 205 to 208.

Ex. 652 to 655.—See 201 to 204.

Ex. 656 to 659.—See 187 and 188.

Ex. 660 to 668.—See 144 to 154.

Ex. 669 to 673.—See 209 to 212.

Ex. 674 and 675.—See Ex. 526 in Cash Book. When we close an account upon which there is but one item, as in this case, the closing lines are ruled in the manner shown under this account.

Ex. 676.—See Ex. 517 in Cash Book. These bank shares are by us considered worth now, at the end of the year, just what they cost, and as we have them on hand in our safe we call them a Resource, therefore allow the account to stand untouched. (See 18.)

Ex. 677 to 683.—These are accounts with our employés, and the balances, $25, $5, $8, and $2.50, are the amounts that are still due them for their services, which they have not yet drawn,—therefore Liabilities to

us, the same as any other personal accounts we owe. It is customary to write on each account, in the manner here indicated, the salary paid to each. (See latter part of paragraph 337.)

Ex. 684 to 687.—See 262 to 264.

Ex. 688 to 746.—See 164 to 173; also 327.

Ex. 694 and 701.—The small figures in the money columns under the amounts throughout this Ledger are the footings of those columns; and in the explanation columns, are the balances that existed on the accounts before the books were closed; consequently are the balances that are taken in the first Trial Balance. (See 808.) These are intended to illustrate the lead-pencil figures referred to in 302.

Ex. 747 to 783.—See 174 to 183.

Ex. 784 to 788.—See 265 to 274.

Ex. 789 to 800.—See 275 to 308.

Ex. 801 to 805.—These are the "Closing Lines" referred to throughout "The Foundation."

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806. Inventory of Goodwin and Emerson's Merchandise, Store and Office Fixtures, etc., etc.,—Taken this 1st day of Jan., 1883.

	Merchandise,	$2212	40
	Store and Office Fixtures,	338	00
	Expense (Coal),	15	00
	Insurance (Unexpired Premium),	27	50

807. When an inventory is taken, it is usually made in a book ruled in the common Journal form as above illustrated; and for the Merchandise, of course each item of goods we have in the store is extended into the inner column separately; then the grand total is finally extended into the outer column. The same also with the Store and Office Fixtures, as well as anything else we may have of value on hand belonging to other accounts.

808. Trial Balance, Taken Dec. 31st, 1882.

Cash Book,	3776	50			
	62		3500		
	350	52	3500		
	1427	25	1032	04	
	352	50	6	52	
	1449	02	25		
	188	45	5		
	28	45	8		
	145		2	50	
	30		314		
	1	70	120		
	16		37	65	
	500		61	17	
	125				
	2	02			
	57	12			
	9	60			
	4	20			
	3	10			
	143	45			
	8671	88	8671	88	

809. The above is the "figure" Trial Balance referred to in 300 and 301. When we have a great many accounts, we may rule extra columns on the page of the Trial Balance book, so as to have nothing but debit and credit money columns on the book; but this is done simply to economize.

810. TRIAL BALANCE.—Taken Jan. 1st. 1883.

43	H. L. Richardson, Barrister,	125			
44	George W. Bennett,	2	02		
45	T. W. Keene,	57	12		
	R. N. Buck,	9	60		
	Adolph Piper,	4	20		
	H. M. Dickinson,	3	10		
43	M. W. Saxton,			25	
	James Kinsella,			5	
	Frank P. Mast,			8	
	Herman Smith,			2	50
45	Sam'l Cupples & Co.,			344	
46	B. T. Babbitt,			120	
	Geo. W. Borland & Co.,			37	65
	Sprague, Warner & Co.,			61	17
	Total Personal Accounts owing us,	201	04		
	" " " we owe,			603	32
90	Cash,	3776	50		
40	Merchandise,	2212	40		
41	Store and Office Fixtures,	338			
	Bills Receivable,	1449	02		
	Bills Payable,			1062	04
42	Expense (Fuel),	15			
	Insurance (Unexpired),	27	50		
43	Union Trust Co. (Shares),	500			
40	J. H. Goodwin—Present Worth,			3571	31
	S. A. Emerson— " "			3232	79
		8519	46	8519	46

811. This is the Trial Balance with the names of the accounts, referred to in 301. This kind of a Trial Balance is a sufficient "Balance Sheet" (see latter part of paragraph 303) to satisfy any business man; but as such a Trial Balance is required only once a year, the book-keeper can well afford to spare time enough to make out for the firm a "Yearly Statement" in the manner hereafter illustrated, which cannot help but prove sufficiently clear and plain to satisfy the most fastidious. (See 812 to 818.) In taking the above Trial Balance, it will be seen that the personal accounts from the Ledger are first taken, then the cash balance from the Cash Book, then the remaining accounts in the Ledger,—last of all the partners' Stock accounts. (See 296, 297 and 298.) After the Trial Balance has been taken the Yearly Statement is then made, the items of which are taken from the Trial Balance for the Assets and Liabilities (see 812), and from the Loss & Gain account in the Ledger for the Losses and Gains. (See 813.) The Partners' Individual Statements are made from the Stock and Private accounts of each of the partners. (See 814.)

812. YEARLY STATEMENT—GOODWIN & EMERSON—Jan. 1st, 1883.

ASSETS.				
Personal Accounts owing us,	201	04		
Bills Receivable—Notes on hand,	1441	02		
Cash on hand,	3776	50		
Merchandise on hand (per inventory),	2212	40		
Store and Office Fixtures on hand (per inventory),	338			
Coal on hand,	15			
Insurance (Unexpired),	27	50		
Union Trust Co. (Shares),	500			
LIABILITIES.				
Personal Accounts we owe,			613	32
Bills Payable—Notes we owe,			1062	04
Present Worth of Firm, Jan'y 1st, 1883,			6854	10
	8519	46	8519	46

(See 810.)

813. YEARLY STATEMENT, CONTINUED—GOODWIN & EMERSON,—Jan. 1st, 1883.

GAINS.				
Merchandise,			785	15
Interest,			6	52
LOSSES.				
Store and Office Fixtures,	14	50		
Expense,	173	45		
Freight and Express,	28	45		
Salaries,	145	00		
Insurance,	2	50		
Collection and Exchange,	1	70		
Advertising,	16	00		
Lost Accounts and Notes,	143	45		
Net Gain for Firm, Jan'y 1st, 1883,	266	62		
	791	67	791	67

(See 789 to 800.)

814. PARTNERS' INDIVIDUAL STATEMENTS,—Jan. 1st, 1883.

J. H. GOODWIN.				
Net Worth, Dec. 1st, 1882,			3500	00
One half Net Gain, Jan. 1st, 1883,	133	31		
Less amount drawn for private use—per private account,	62	00		
Net Private Gain,			71	31
Present Worth, Jan. 1st, 1883,			3571	31

(See 563 to 566 and 571 to 575.)

S. A. EMERSON.				
Net Worth, Dec. 1st, 1882,			3500	00
Amount drawn for private use—per private account,	350	52		
One-half Net Gain, Jan. 1st, 1883,	133	31		
Net Private Loss,			217	21
Present Worth, Jan. 1st, 1883,			3282	79

(See 567 to 570 and 576 to 583.)

815. SALES.

	1881.	1882.	1883.	1884.	1885	1886.	1887.
January,							
February,							
March,							
Total for the year,							

816. In order to present to the firm, in a compact form, a statement of the monthly sales, in such a way that the sales for one month or year may be compared with the sales of another, the above form is recommended. This form is continued in length for the twelve months of the year, and in width for as many years as there can be money columns made on the page; or if begun on the left hand page of the book, it may be extended across both pages. When this statement is made, the total sales (cash and on account) are, at the end of each month, here recorded. A statement of the firm's Expenses may be made in the same manner; but this requires more labour, as it necessitates the making, first, of an itemized statement of the expenses.

817. PROPORTION OF GAINS TO SALES.

	1882.	1883.	1884.	1885.	1886.	1887.
Proportion of *Gross Gain* to Sales,	25.8 per cent.					
Proportion of *Net Gain* to Sales,	8.76 "					

818. The foregoing is a statement easily made, and proves one of great importance and satisfaction to the business man; since he can therefrom compare one year with another, the proportion of the gross and of the net gain to the sales. This statement is made only at the end of the year after the books have been closed. The proportion of the *gross gain* is then found by adding two ciphers to the *gain on Merchandise*, and dividing this amount by the *total Merchandise sales for the year*—which in this set of books would be as follows: 3.043.18) 78,415.00 ($25\frac{8}{10}$ per cent. (See 587 and amount in small figures under 590.) The proportion of the *net gain* is then found by adding two ciphers to the *net business gain* (found on the Loss & Gain account) and dividing that amount by the *total Merchandise sales for the year*,—which in this set is as follows: 304318) 2666200 ($8\frac{76}{100}$ per cent. (See 797,798 and amount under 590.)

STOCK COMPANIES.

819. *Organization.*—When a stock company is organized, it is done by several persons coming together and making a certificate to the effect that they propose to form a corporation to bear a certain name, for the purpose of transacting a certain kind of business at a certain place; and that they propose to issue a certain number of shares at a certain price per share; that the capital stock of the corporation is to be a certain amount; and the duration of the corporation a certain period of time. This certificate is filed in the office of the Provincial Secretary, after having been previously advertized in the *Gazette.*

A subscription book is then opened and the shares of the company are disposed of *by subscription,*—the persons subscribing paying ten per cent. down, and the balance afterward at such times and in such payments as the by-laws, hereafter to be made, may designate.

After one-half of the capital stock has been subscribed for, a meeting of the subscribers is called and by-laws are by them made; a record of the proceedings in this meeting is then filed in the office of the Provincial Secretary, whereupon a certificate is issued to the effect that the corporation is fully organized according to the laws of the Province.

820. *Stock Holders or Share Holders.*—Certificates of Stock are issued to each of the subscribers for the number of shares by each subscribed. These certificates are transferable at the pleasure of the owners, except when the owners are indebted to the corporation, then the transfer cannot be made without the consent of the corporation.

821. *Capital Stock Increased or Diminished.*—The capital stock of a corporation may be increased or diminished by a vote of a majority of the stockholders representing a majority of the stock, a statement of which increase or decrease of stock must be filed with the Provincial Secretary. The capital stock of a corporation is never allowed to exceed a certain amount,—that amount being determined by the laws of the Province governing "Corporations."

822. *Book-keeping for a Stock Company.*—A "Capital Stock" account is opened in the General Ledger, which account is credited whenever capital is paid in, *i. e.*, when payments are made on subscriptions, the Capital Stock account is credited for the amounts of such payments. When all the shares originally issued by the corporation are sold and paid for, then the Capital Stock account will be credited for just the amount that the certificate originally issued and filed with the Provincial Secre-

tary indicated would be the capital stock of the corporation. The amount for which a Capital Stock account is credited is called the "Paid Up Capital" of the Company.

After the shares have thus all been issued and paid for, the Capital Stock account is allowed to stand from year to year without an entry being made thereon, unless the capital stock of the corporation be diminished or increased and then this account is debited or credited accordingly.

823. *Gains and Losses and Surplus Fund.*—The gains and losses of the corporation are first carried to a Loss and Gain account the same as in any other book-keeping; but afterward when the net gain or the net loss is found, unlike any other book-keeping, it is carried to a "Surplus Fund" account, and in that account it is allowed to remain until a dividend is declared by the Company, at which time this "Surplus Fund" account is debited and a "Dividend" account is credited for the amount of such dividend. Whenever the dividends are paid to the shareholders, the "Dividend" account is debited for such amounts; therefore, when they have all been paid, the "Dividend" account will just balance.

824. There is another method of disposing of the net gain, which is to declare a dividend as soon as the net gain is found for a certain portion of that gain; then credit "Dividend" account for the amount of the dividend thus declared, and "Surplus Fund" account for the balance; the former method, however (823), is thought to be the better one.

825. *Dividends.*—The dividend is seldom declared for the full amount of the gain, for the reason that the Company wishes to reserve a portion of the amount as a surplus fund, against which they may draw at such times as the net gain is not sufficient to make up the customary rate per cent. of dividend which is at regular intervals declared by the Company. For example: If a Company declare a five per cent. dividend semi-annually and the number of shares issued by this Company require at this per cent. a dividend to the amount of $15,000 and the net gain of the Company be only $12,000, then the "Surplus Fund" account must be drawn on to the extent of $3,000.

If the final result of the Company's business be a *net loss*, the entire amount of such loss must be carried from the Loss and Gain account to the debit side of the "Surplus Fund" account.

Some Stock Companies declare dividends semi-annually, some quarterly, and a few monthly, while others have no stated times in which to declare them, but do so only at such times as it is the general wish of the stockholders so to do.

826. *Dividend Receipt Book.*—This is a book in which are entered in alphabetical order, whenever a dividend is declared, the names of each of the shareholders, together with the number and value of shares held, the percentage of dividend and dividend amount. Opposite each of these amounts, whenever the dividends are paid to them, the shareholders sign their names and enter the dates upon which they receive such payment.

827. *Stock Ledger.*—The Stock Ledger is a book in which is kept a record of the names of all the shareholders and number and par value of shares held by each. It is a private book, and *is in no way connected with the other books of the Company.* A "Capital Stock" account is opened in this book, which account is debited for the total number and par value of the shares issued by the corporation; following this, an account is then opened with each of the shareholders; then, the "Capital Stock" account is credited for all shares that are disposed of, and each of the persons to whom such shares were sold are debited for the number and par value of same. When the total number of shares issued by the corporation has been disposed of, the "Capital Stock" account here opened will balance, and all the shares will have been debited to shareholders; therefore, when this account does not balance, the difference between the two sides always shows the number and par value of shares remaining unsold, or not yet subscribed for. The total of all the accounts in the Stock Ledger (including the difference, if any, between the two sides of the "Capital Stock" account) should always represent just the amount of stock issued by the corporation.

When a shareholder transfers shares to another person, the person to whom the shares are transferred must take the certificate of stock to the Company which issues it and have the transfer recorded in the Stock Ledger; which is done by the Company crediting the old shareholder and debiting the new.

828. *"Limited" Liability and "Full Liability" Companies.*—LIMITED.—When the word "Limited" is affixed to a stock company's name, it signifies that each shareholder is individually liable to the creditors of the company for only the amount representing the value of shares held by each. If suit is brought against the Company for a claim and it is not paid by the Company, action may be brought against any one of the shareholders to the extent of the shares held by him; and when claim is by him paid, he may recover from each of the other shareholders the amount paid in proportion to the shares by each held—less his own proportion of such claim. If a "Limited Liability Company" omits to add the word "Limited" after its name wherever and whenever they cause it to appear

a heavy fine is imposed for each omission. FULL.—When the word "Limited" is not affixed to to a stock company's name, it is understood that it is a "Full Liability Company." In such a company the shareholders are each individually liable to the creditors of same for the total liabilities of the company. However suit cannot be brought against an individual shareholder until it has first been brought against the Company, and then, if not paid, the claimant may institute proceedings against any one of the shareholders of the Company for the full amount of the claim; and after same has been paid by the shareholders, he may recover from each of the shareholders proportionately, according to the number of shares held by each, the amount paid—less, of course, his own proportion of such claim.

SUNDRY INSTRUCTIONS, HINTS, ETC.

829. *Checks, Drafts, Notes, Etc.*—When a check is printed payable to *bearer*, it may be made payable to *order* by simply erasing the word "bearer" by drawing a line through it with the pen.

830. When you receive a bank draft, sight draft, or check made payable to the order of the party sending it, see whether or not it is *endorsed* by him. If not endorsed return it to him for the endorsement, as it is of no value to you until so endorsed.

831. In receiving a check or draft from a person, upon which check or draft the person's name does not in any place appear, whether made payable to order or to bearer, have this person from whom you receive it endorse it; for if it prove to be worthless, you can then have recourse to this person, as by endorsing his name on the back of it, the payment is by him guaranteed.

832. When we return a draft, note or check to the maker of same, which draft, note or check we had endorsed, we should always erase our name from the paper by drawing lines through it with the pen.

832. 1-2 In handing a note to the bank or express company for collection, which note will be due in a few days, some business men simply make a memorandum in full for same, and place the memorandum with the not-yet-due notes—making no entry on the books until the note is collected and the proceeds of same returned,—then the Bills Receivable account is credited, and the memorandum found and destroyed.

833. *On Receiving Cash.*—When cash is received examine it closely to see whether or not there are any counterfeits; and if there be a doubtful

bill, make a memorandum of it, showing from whom it was received, then try this at the bank in the next deposit.

834. *Payment on Discounted Notes.*—When we receive payments on notes which have been discounted and still remain in the bank, we simply take the money to the bank and see that the amount is by the banker endorsed thereon—no entry being made for same on our books unless it be to make a memorandum of such payments in the Bills Receivable and Bills Payable Book.

835. *Waive Protest.*—When there are no endorsers on the notes we receive from our customers, and we wish to discount them in the bank, waive protest by writing on the backs of such notes "Protest Waived," and thereby save the customers the protest fees that would otherwise be charged if the notes should not be paid when due. Care must be taken not to waive protest on notes having endorsers; for if protest be waived on such notes, the security is, in some States, released.

836. *Sight Draft.*—In making a sight draft on a person, if you want it paid upon presentation, leave the "time" blank; *i. e.*, commence it: "Pay to the order of," etc. It is customary, however, to make the drafts "at sight" or "at three days' sight" in order not to take the person upon whom drawn by surprise, but to give him a little time to raise the money.

837. *Computing Interest on Payments.*—In computing interest on payments on notes, it is the better plan to compute the interest on the full face of the note up to the present time, and afterward on each payment up to the present time; then the difference may be found between the sums total of the interest on the payments and the amount of the interest on the full face, which difference will be the net amount of interest due. The total amount due will, of course, be the difference between the sum total of the payments and the sum total of the face of the note *plus* the interest due.

838. *"C. O. D." Sales, and Sales for which we make Sight Draft as soon as Goods are Shipped.*—When we ship goods to the country C. O. D., or ship them and make a sight draft on the person as soon as the goods are shipped, we may enter the person's name under our "Petty Accounts," if we have no regular account with him, as it is not advisable to open an account for only one entry. The person must, of course, be charged as soon as the goods are shipped, and credited when the money is, by the express company or bank, collected and returned to us.

839. *Different Kinds of Business Consolidated.*—When a merchant conducts several different kinds of business in one, and wishes to know

his gains on sales for each, the books may be kept in the following manner: The cash sales for each business must be kept seperate, and at the close of each day, week or month credited to the respective accounts to which they belong; extra columns may be kept for each business in the Journal, and whenever sales are made on account, the amounts of sales extended into the respective columns to which they belong, the totals of these columns carried forward until the end of the month, and then the totals for the month credited to the respective accounts in the Ledger. For example: If Grocery, Dry Goods, and Boots and Shoes consolidated, on the credit side of the Journal would be kept four columns; a "Miscellaneous Cr.," a "Grocery Cr.," a "Dry Goods Cr." and a "Boots and Shoes Cr."; then when a sale is recorded, that part of it which belongs to the grocery department is extended into that column, the dry goods into the "Dry Goods" column, etc.; and whenever a credit that belongs to none of the three latter columns, it is extended into the "Miscellaneous Cr." column. The Invoices are first assorted according to the different kinds of business, after which the Grocery bills are entered, then the Dry Goods, and then the Boots and Shoes. The columns for each of these different kinds of business are treated the same throughout as is the "Merchandise Cr." column in the Journal of "The Illustration;" the invoices are entered the same as the Mdse. invoices, and the accounts are treated the same as the Merchandise account is treated in "The Illustration."

The books are kept in this manner simply as a matter of satisfaction, that we may know how much has been made on the goods sold from each business. There are but very few who keep the expenses for each business separate; but when they do, either a "full set" of expense accounts must be kept for each business, or the expenses incurred in each business must at once be charged directly to the respective *business* to which it belongs. For example: When a grocery clerk is paid his wages the amount must at once be debited to the Grocery account.

The expenses may be charged proportionately to the different kinds of business; *i. e.*, when the sum total of the expenses for the entire business is found, a certain per cent. of the same may be carried to the debit of the Grocery account, a certain per cent. to the Dry Goods, and a certain per cent. to the Boots and Shoes.

840. *On Transferring Accounts from an Old Ledger to a New.*—This is done by balancing the accounts in the old Ledger in the manner described in paragraph 308, following the directions there given in entirety,

excepting, while reading those instructions, substitute "to the page opened for this account in the new Ledger" in place of "new page."

841. *Statements.*—It is advisable to make and send out statements of all our customers' accounts on the first of every month. By so doing an account cannot escape our notice and thereby be allowed to remain on our books until it is long past due without the person having been notified monthly of that fact. Another reason for so doing is, because if any mistakes have been made in posting, by which an item was posted to the wrong account or to the wrong side of an account, we are then notified by the persons who receive the incorrect statements, and we may then make the corrections in the Ledger.

842. *On Copying Invoices of Goods We Buy.*—There are a few firms who keep Invoice Books or Purchase Books into which they copy the items from all the bills of goods they buy. This is an absurd practice and a lavish waste of time; for, after the amount of an invoice has been credited to the person, the invoice is thereafter held as a memorandum for reference; and, if we wish therefore to refer to a purchase we have but to find the invoice, which is done in the manner described in 309.

843. *Classification of Accounts.*—When but one Ledger is used, it is advisable to have the miscellaneous accounts in the fore part, and following these, the accounts with persons from whom we buy, reserving the back part of the Ledger for the accounts with our customers; or, we may have our dealers' accounts in the fore part and our creditors, in the back, as we prefer.

844. *Overcharges, etc.*—Sometimes persons from whom we buy goods guarantee the freight at a certain rate, *i. e.*, guarantee that the goods will be laid in our store at a certain rate per 100 lbs. or per piece. If the Railroad company charges us more than this rate, we debit the overcharge to the person from whom we bought the goods. If any overcharge in prices on goods, such overcharge may be deducted from the bills before they are entered. If goods are damaged, we must first ascertain whether they were damaged while in transit, or before they were shipped,—if the former, the Railroad company must be debited for the amount of such damages; if the latter, the amount of such damages may either be deducted from the bill before it is entered, or the full face of the bill credited to the person and the amount of the claim for damages afterward debited to his account.

If any error in "figuring," the amount of such error may be deducted from the bill before it is entered.

If a claim for overcharge, damaged goods, or error, is made on a bill after it has been entered, the amount of such claim cannot then, of course, be deducted from the bill, but must be debited to the person's account. Whenever such a charge is made, the person must, in all cases, be notified of same either by sending a bill or writing a letter to that effect.

845. *"Easy" Customers.*—There are very few firms who have not some customers who "take the world easy" and allow nothing to trouble them—not even their *debts*; and in consequence of this independence (?) such customers would willingly allow their accounts to pass into the "vale of forgetfulness," were it not for the fact that somehow or another the owners of such accounts cannot tune their ideas to harmonize with them, and, therefore, there is a discord. We might dun such customers for cash, or for notes to balance their accounts until "doomsday," and be just as successful at the beginning of our exertions as at the end. However, if we succeed in getting notes from such persons, there are then some hopes of ultimately collecting the amounts due; for they then realize that they must make some exertion to pay, unless they have become so hardened that not even a note will move them to action, The tougher the customer we have, the sharper the "goad" we seek—if only moderately dilatory, and we think him abundantly able to pay all his debts, we simply ask for a note without security; if a little doubtful, we ask him for a note with a good endorser; if altogether doubtful, we endeavour to get notes secured by a mortgage on his stock of goods, his lot, or his farm. There are many customers who, when we send a statement requesting them to send us notes for amount due, will take no notice whatever of our request; but if, when we send the statement, we will fill out and enclose with same notes for them to sign, they then feel in duty bound either to do as we request, or offer some very good excuse for not so doing; therefore this latter method is recommended.

846. *The Services of an Office Boy.*—A smart office boy may, in most cases, be a very great convenience to a book-keeper; so much so, that the services of an assistant book-keeper may be dispensed with. For instance, he may do all such work as making duplicate bills, copying letters, addressing envelopes and enclosing the letters, statements or bills in same, delivering the statements to the city customers on the first of every month, running errands, etc., etc.; forms of business letters may be prepared by the book-keeper, and by using these, the boy may write a great many business letters that would otherwise have to be written by the book-keeper. One day in such a school is better for the boy than a whole month in a business college.

847. *Errors in Posting.*—When errors are made in posting, some book-keepers make what is called a "contra entry;" *i, e.*, make an entry on the opposite side of the account "By Error" to balance the entry erroneously made, and afterward post the amount as it should first have been posted; and some book-keepers erase with a steel eraser the error, but some business men object to "scratching on the books," not wanting a figure altered after it has once been placed in the Ledger. A better method than either of the foregoing, and one to which no person could object, is to simply draw a red line through the amount of such error and then post the amount as it should have been posted. If, however, the error was made in a previous month, it is then necessary either to make a contra entry, as above described, or if a line drawn through the amount, to change the lead-pencil Ledger footings.

848. *On Making Mistakes.*—There are some business men who, in a temporary fit of insanity, forget that they are the only persons who can justly claim "infallibility," and, in consequence of this little forgetfulness, chastise the book-keeper severely for every little "blunder" he makes. A book-keeper's work is, to say the least, very monotonous, and it is with great difficulty that he confines his mind to his work from morning until night, day after day. The errors he makes are usually made at such times as his mind is roaming in other fields rather than that in which he is at work—perhaps while he is looking forward to the day when he can give "figures" and "trial-balances" a long vacation. While posting, it is advisable for the book-keeper to "make assurance doubly sure" by comparing the amount carried to the Ledger with the amount on the book from which it is posted, at least *twice*, noticing at the same time whether posted to the proper side of the account.

When cash is received or paid out, it is better not to trust the memory one instant, for it is sometimes very treacherous, but to make the entry on the Cash Book *at once*; otherwise an hour might be spent in seeking for a little "difficulty" in the cash that might have been avoided if the entry had been made at the proper moment.

Units Under Units, etc.—The utmost care must be taken at all times to place units directly under units, tens directly under tens, etc., etc.; for while adding, if such care has not been taken, it is very easy to make a mistake. Better to spend an hour now in being over-particular on this score, than a week at the end of the month when the trial-balance is taken, in finding an error caused by carelessness in placing tens under hundreds, or something similar.

849. *Invoices, Notes, etc., we have to Pay.*—For the invoices, notes, and acceptances for which we have to remit, and the sight drafts for which we have to pay, would recommend the following method of making the daily lists or memoranda: Take a small book and arrange the dates in the form of a diary, omitting the Sundays; then, on the first of each month, from the Bills Payable Book, enter under the respective dates when they become due, on this small book, all the notes and acceptances we have to pay during the month. After which, the sight drafts we accept and the bills for which we wish to remit may, from day to day, be herein entered under the respective dates when due. Enter first the amount; then the firm name, adding the address (if not familiar with same); then, if a note, acceptance, or sight draft, write "Note," "Acc.," or "St. D'ft," adding the date and time of same and if a bill or several bills, add date or dates of same. By making the lists in this manner, all the remittance letters may be written from the memoranda here made. The amount to be paid daily may be found by finding the sums total of these lists. If we wish to buy Exchange (bank drafts) to pay for such notes, invoices, etc., as we have in one of these daily lists, or if we wish to pay for such of our notes, acceptances, and sight drafts as are made payable at our bank, we simply find the sum total of the list thus made and give the bank a check for the same, filling out a "Drafts Wanted" blank for the Exchange we want, and, together with the "notices" we have received from the bank for notes and acceptances due on that day, pin them to the check; after which we receive from the bank, in return for same, the notes and acceptances stamped "Paid," and the Bank Drafts, which should aggregate an amount equal to the full amount of the check we gave. The following will be given as an illustration of this method—the "17" at the top being the day of the month:

—17—

200.00—M. D. Hesse, Guelph—Note—11-16—60 ds.
300.00—L. O. Brainard—Acc.—12-15—30.
100.00—J. B. Lippencott & Co.—St. Dft.
122.00—D. Appleton & Co.—11-16—12-2.

$722.00

850. *Sundry Minute Savings of Time and Labour.*—A great saving of time may be realized in the wholesale business, while making bills and statements, by giving the larger cities in which we have many customers, a *city number*; then the bill clerk, while making the bills, or the bookkeeper, while making the statements, for the convenience of the person

who addresses the envelopes for same, simply indicates the addresses of the customers by adding the respective city numbers representing the cities in which they belong—the person addressing the envelopes being also, of course, familiar with the city numbers.

While addressing several envelopes, lay the letters, bills or statements to the right and the envelopes to the left; then, after they have all been addressed, they will be found in regular order, and consequently such letters, etc., may be expeditiously folded and enclosed.

While posting it is advisable to use a small slip of coloured paper on the money column of the Journal or Cash Book, and always to keep this directly over the amount that is next to be posted, moving the slip downward to the next amount as soon as that amount is posted. By so doing, much time may be saved that would otherwise be spent in tracing the lines out for the amounts; and it is a good way to guard against errors in posting the wrong amounts to the Ledger.

On the other side of the Line it is now rapidly growing into custom among business men to omit all "handles to names," such as "Mr.," "Esq.," "Messrs.," etc., while addressing envelopes, writing letters, notes, checks, drafts, etc., it being thought to be understood, therefore superfluous. In Canada, however, we properly adhere to the more courteous practice, which is certainly preferable.

While receipting bills, statements, etc., the simple word "Paid" answers the same purpose as "Received Payment," and is much more quickly written.

It is of course understood by everyone, that the nearer perpendicular the writing, the more there may be written on a line. It is better to have an explanation of an entry in the Cash Book never take up more space than the line upon which the entry is made; and as some entries require a considerable amount of explanation, it is necessary that the same be made very compact as well as very concise.

851. *Sundry Explanations and Remarks.*—The meaning of the word "Sundries" is "*several.*"—For example: when is written "Mdse. Dr. to Sundries," the meaning is, that Merchandise account is debited for the sum total of an amount for which two or more or *several* accounts are credited.

A debtor is a person who is indebted to or owing us; and a creditor, is a person to whom we are indebted or owing; therefore, the former, one who is debited on our books, and the latter, one who is credited on our books.

When goods are sold or bought on "account," the meaning is that they are not paid for, but are to be debited or credited to the party to whom sold or from whom bought; therefore, when the expression "on account" is used, it indicates that the amount is to be placed to the debit or credit of some personal account.

Those accounts upon which we think there will never more be entries made, are called "Dead Accounts," and those accounts which are yet open, and upon which we either frequently or seldom make entries, are called "Live Accounts." The more frequent the entries are made, the more is the vitality with which the account is infused.

When there are but one or two "extra columns" in the Cash Book or the Journal, it is not necessary to have printed or to write the names of same at the top of each column; for the uses of same are known to the book-keeper and he is not obliged to refer to the top of the page for the name of the column in which to enter an item. However, when several "extra columns" are used, it is necessary to have the book ruled and printed to order.

No employé can sign notes, drafts or checks for the firm without first having procured a "Power of Attorney" authorizing him so to do; but he may endorse for deposit in the bank drafts, notes, checks, etc., made payable to the order of the firm, by simply getting a written order from them to the cashier of the bank authorizing him to do so. When the latter is done, the signature of the employé so authorized is recorded in the bank's "Signature Book," and the firm's written order is taken by the cashier of the bank and filed away, so as to insure against any accidents, etc., that might occur through the carelessness or negligence of such employé.

When a merchant's Liabilites exceed his Resources, he is then insolvent; and the difference between the sum total of his Resources and the sum total of his Liabilities is his *net insolvency*, which difference will appear on the *debit* side of his Stock account instead of on the credit, as is the case when the Resources exceed the Liabilities and the difference is known as a *net worth*.

SINGLE ENTRY BOOK-KEEPING.

852. The difference between Single Entry book-keeping and Double Entry book-keeping is explained in paragraphs 3 and 6. Any person who is the possessor of as much as a thimble full of brains, may already, without instruction, justly and honestly claim a knowledge of Single Entry book-keeping; for the boy but five years of age (unless he be a son

of a business college professor) knows full well that if he buys something and does not pay for it that he owes the person from whom the article was bought, and thereupon he conceives the idea of *credit;* and when he pays for this article, he knows full well that the debt exists no longer, and thereupon he conceives the idea of a debit to balance that credit;—when he sells an article and does not receive payment therefor, he knows that the person to whom he sold the article is indebted to him for same, and thereupon the idea of *debit* is conceived; and when this person cancels the obligation by paying for the marbles or taffy, the boy knows full well that his comrade to whom he sold the same owes him no longer, and thereupon, an idea is conceived for a credit to balance that debit—this is all that Single Entry book-keeping consists of—simply debiting persons when we sell them goods on account in the manner and form illustrated in paragraph 370, and crediting them when they pay for same; and crediting persons when we buy goods from them on account in the manner illustrated in paragraphs 401 to 407, and debiting them when we pay for same.

It will be seen that in strictly Single Entry book-keeping there are no accounts in the Ledger but *accounts with persons;* therefore Single Entry, unlike Double Entry, does not exhibit a statement of the business done, but is simply a record of the amounts owing to us and by us on account. (See 3.) In posting an item in Single Entry, if the person is *debited,* we simply post the amount to the debit of his account in the Ledger, and make no credit whatever; if the person is *credited,* we simply post the amount to the credit of his account in the Ledger, and make no debit whatsoever for same. Whenever there are any other than *personal accounts* in the Single Entry Ledger, there has been just so much borrowed from Double Entry book-keeping. (See 313 and 314.) There are a great many firms who keep a Merchandize account and an Expense account in the Ledger simply as memorandum accounts,—to the Merchandise account they post at the end of each month, the same as in Double Entry, the total sales for the month; and to the Expense account they post all items of expense, of whatsoever kind. These accounts are kept just as a matter of gratification that they may see what their total sales for the year are and what their total expenses. They also keep a Cash Book which they treat in the same manner as the book illustrated in this work. There are some houses who keep a Bank account—crediting the bank on the debit side of the Cash Book when checks are drawn, and debiting the accounts for which such checks are given on the credit side of the Cash Book;—and debiting the bank on the credit side of the Cash Book whenever deposits are made; but the system recommended in 86½ is the one most in use.

ADDITIONAL BOOKS USED IN A WHOLESALE BUSINESS.

853. The books used in a wholesale business in addition to those already explained and illustrated heretofore in this work are as follows:

Back Orders.—A book in which are entered orders for goods we have not in stock, but have ordered or intend to order. Such orders are allowed to remain in this book until the goods arrive, then they are filled and the charges transferred from this book to the Journal, the same as from the Sales Books to the Journal.

Debit Ledger or Dealers Ledger.—A book in which are kept exclusively accounts with *our customers.*

Credit Ledger or General Ledger.—A book in which are kept accounts with persons from whom we buy goods; also all other accounts that do not belong in the Debit or Dealer's Ledger.

Eastern Order Book.—A book in which is made a record of the goods we order, whether through agent or by mail, with prices and terms affixed which were guaranteed by agent or quoted by mail. Nearly all large wholesale houses have a Stockkeeper, whose duty it is to keep posted on the stock of goods in the store, and to report whenever the stock is running down in any particular line; then a memorandum is made in this book and the goods are ordered.

Receiving Book.—This is a book in which is made a record of goods we receive from the parties from whom we bought. The record is made just as soon as the goods are placed in the store. The invoices are checked off from this book to indicate that the goods have been received.

Change Book.—It is customary with most manufactories and large wholesale houses to notify their customers of any changes in prices of the goods they handle; and when we receive such advice we make a memorandum of the present price in this book. Our travelling agents are then all advised of such changes,—if not of much consequence, by letter, and of great importance, by telegram. We use our *cost mark* in this book instead of the figures to prevent the "curious" from becoming enlightened should they at any time find this book lying open on the desk.

Price Books.—These are small books carried by each of the salesmen and proprietors of the firm, in which is arranged in alphabetical form a list of all the goods in the store with both the cost and the selling prices attached. Whenever a memorandum is made in the Change Book for a change in the price of any particular line of goods, the change is at once made on each of the price books to correspond with same.

Sales Books.—In some of the largest wholesale houses a very nice system of keeping Sales Books is adopted, which will be described as follows; They have labelled on one, "Monday Wednesday, Friday;" on the other, "Tuesday, Thursday, Saturday." The sales for each of the different days of the week, are recorded in the respective book upon which is labelled the day. While entries are being made on Tuesday in the "Tuesday" book, the entries that were made on the previous day are being posted from the "Monday" book; therefore the "Monday" book is handed in to the book-keeper by the entry clerk on every Monday night, and the "Tuesday" book is by the book-keeper handed to the entry clerk on every Tuesday morning and so on through the week. By so doing the book-keeper is never interrupted while posting these books.

Sales—Another Method.—There is another method which will be described as follows: To have loose sheets ruled in regular Sales Book form, and numbered from "1" forward. The sales are recorded on these sheets the same as they would be if recorded in a book; when a sheet is filled it passed to the book-keeper who posts all the entries on it, and afterward files it in a safe place until he has a certain number of pages or of months, when he has them bound in book form. The total is posted to the credit of Mdse. account monthly from this book.

Sales—Another Method.—There is another method which is much in use because of its simplicity and labour saving, which will be described as follows: Write the invoices of goods we sell in copying ink and copy them in a copying book used expressly for that purpose; post the charges to the personal direct from this copying book to the Ledger, carry forward the sales from page to page until the end of the month, and then post the total for the month to the credit of Merchandise. Some firms adopt a method of *numbering the bills*, and when posting to refer in the Ledger to the bill number, instead of to the page upon which the bill is copied.

The Different Books Used.—The books used in a business depend *entirely* upon the nature and style of the business, although a person will often find books exactly alike in nature and uses.

DIRECTIONS FOR CLOSING A SET OF BOOKS FOR A BUSINESS WHICH HAS BEEN RUNNING FOR SEVERAL YEARS—THE BOOKS HAVING BEEN KEPT BY SINGLE ENTRY.

854. 1st.—Take an inventory of all the merchandise, store fixtures, etc., etc., belonging to the firm.

2nd.—Make a statement of all the Resources and Liabilities of the firm, (See 20 and 21.) Make this statement in the form of the Trial Balance illustrated in paragraphs 810 and 812,—entering the Resources in the debit column and the Liabilities in the credit. Include the private accounts of each of the partners in this statement, the same as any personal accounts.

3rd.—Find the difference between the sum total of the Liabilities and the sum total of the Resources, and this difference will be the *present gross worth of the firm.*

4th.—Find the net worth of the firm at commencement of business (the sum total of all the partners' original investments), then, find the difference between the now present *gross* worth and the then present *net* worth of same—which difference will be the net business gain or net business loss for the firm—if worth *more* now than then, of course a gain; and if worth *less* now than then, a loss.

5th.—If a net business gain, credit each partner's Stock account for his share of such gain; if a net business loss, debit each partner's Stock account for his share of such loss.

6th.—Close each Partner's Private account and carry the balance of same to their respective Stock accounts. If the debit side of a Private account be the larger, the difference between the two sides is carried to the debit side of the Stock account; if the credit side be the larger, the difference between the two sides is carried to the credit side of the Stock account.

7th.—the difference between the two sides of the respective Stock accounts is now found, which difference is the *present net worth* of each—and this is the object in view in closing the books—to find the *present net worth of each of the partners.* This concludes the closing of the books.

855. *Remarks.*—There are some firms that keep their books by Single Entry and allow the same to run several years without closing them,—either not wanting to take the trouble to find out how much lost or gained by closing the books, or worse still, not knowing the proceedings for doing so, and they thus allow them to run from year to year, until finally, there is a "death in the family," or one of the members of the firm wishes to withdraw, and then it becomes necessary to close the books to find the present net worth of each; which closing is done according to instructions given in this article.

In making a statement of the Resources and Liabilities, the Private accounts of all the members must be included, in order to ascertain the net business gain or net business loss of the firm; and afterwards, these Private accounts must finally be closed and carried into the respective Stock

accounts of each of the members in order to find the present net worth of each.

The *present gross worth* of the firm is found by finding the difference between the sum total of its Liabilities and the sum total of its Resources, *Private accounts included.*

The *present net worth* of the firm is found by finding the sum total of all the amounts credited to each of its members as his present net worth, *i. e.*, after such accounts have been closed as per instructions in "7th" of this article.

856. When there is but a single proprietor, there are some who do not keep a Stock account, and a few who keep neither a Stock nor a Private account, but charge amounts drawn for private use to no account—simply writing "Private use," or something similar, on the Cash Book; this is, however, a very loose system of book-keeping, affording no satisfaction whatever to the business man other than merely showing him the personal accounts owing to and by him. When no Private account has been kept, there is no way of finding how much has been expended for private use, unless an account had been kept called "Private Expenses;" neither can the amount gained or lost in the business be ascertained, for the reason that the amount drawn for private use has been taken from the business and no account made thereof.

856½. If other than personal accounts have been kept, such as Expense, Merchandise, etc., the balance from such accounts must not be carried forward to the new double entry books or accounts, but such old accounts or old balances must be dropped, abandoned, for the reason that they were kept in Single Entry simply as memorandum accounts, in order that the firm might know what their expenses and sales were.

ON "MAKING THE CASH."

857. It is best to balance the Cash Book every day, although some firms balance it only once a month. Whether we balance the book every day or not, we should every night see whether the balance on hand as shown by the Cash Book agrees with the amount we actually have on hand. The writer would recommend the following described and illustrated method of finding whether or not the cash balances: Take a slip of paper and put down in figures at the left, as illustrated below, first, the balance we had on hand in the morning, and under this the total cash received during the day; add these amounts together; then under this sum just found, enter

the total cash paid out during the day, which amount subtract from the sum above it which will give the amount of cash we ought to have on hand. Then put down in figures at the right on the slip, as illustrated below, first, the balance in the bank as shown by the Check Book, then the amounts of all checks, drafts, etc. (called cash), and the cash we have in the cash drawer, after which find the amount of cash on hand we actually have by finding the total of these amounts, the sum of which total should just agree with the balance on hand as shown by the Cash Book and indicated in the figures at the left on the slip. (See below; also in the Cash Book, 485, 548, 551, and 552.)

$3,000 00	$3,240 80 bank
4,268 81	104 00
	22 30
7,268 81	86 40
3,492 31	5 00
	318 00 currency
$3,776 50	
	$3,776 50

858. *Handling the Cash.*—If the cashier is to be responsible for the cash, no other person should be permitted to handle it,—then, if any errors occur by which the Cash Book and cash do not agree, he may justly be held accountable for same.

If, on the other hand, everybody in the store is allowed to go to the cash drawer to make change and pay out and receive cash, it is then impossible, if an error be made, to know by whom it was made.

If the balance called for by the Cash Book does not agree with the cash actually on hand, and the cashier after diligent search does not find the error, he may make it agree in the following described manner: IF CASH IS OVER.—If the cash is over, *i. e.*, more cash on hand than is called for by the Cash Book, the amount over may be credited to the Merchandise account by writing on the debit side of the Cash Book, "To Mdse.—Cash over could not account for," and the amount, and this will make them agree; afterward, if the error is found for this amount, the proper account may be credited and merchandise debited. IF CASH IS SHORT.—If the cash is short, *i. e.*, less cash on hand than is called for by the Cash Book, the thoroughly conscientious cashier will charge the amount short to his own account, by writing his name on the credit side of the Cash Book, adding, "Cash short could not account for;" and afterward if the error be found, will debit the amount to the proper account and credit his account for the same—this is not done, however, until after he has made diligent

and thorough search and is finally obliged to "give up in despair." The reasons why he should do so are: He might have made the error in making change; or, in paying an account and not charging the person; or, in paying a person more than he charged them.

SHORT CALCULATION.

ADDITION.

859. In adding a column of figures you should learn to do it without mental labour; and, this may be acquired by *any one* with a little practice. The art is acquired by learning to *read* a column of figures as you would a sentence in prose. By *practice* you have become so familiar with *letters* that when you see a group of them together it is not necessary for you to stop and separate the letters, but you can tell at a glance what the word is. By *practice* you may become so familiar with *figures* that when you see a group of them you can tell at a glance what the sum of them is. In practicing the reading of a column of figures in this way, do not let your brain work at all, but simply pass your eyes over the figures as if you were reading a sentence, not reading too slowly, and you will yourself be surprised to find how readily you may acquire the art. First, begin with practicing on two figures, then on three, four, five and so on, until finally you will become able to write the sum total of a whole column without once having thought of an amount until you have the entire product. For example: When you see, one above the other, the following figures, 9, 9, 5, 5, you know at a glance that the sum is 28. The reading of a column of figures, as in the reading of a sentence, is done by dividing a large group of figures into smaller groups, and from group to group reading through a column the same as from word to word we read through a sentence. Another example: 9, 6, 4, 2, 8,—in this, we group the last four figures, and by taking them all into our eye at once, we see that the sum of them is 29, then we have but to say 20-9 or 29. The expert in addition will skip around "here, there and everywhere" in order to do this grouping, and will sometimes go back to the beginning of a column to pick up a stray figure that he had left behind.

In finding the sum total of several long columns of figures, it is well to set down one under the other, the total of each column; then, after the sum total of the last column at the left has been found, the grand total or product will be the sum total of the extreme left hand column, with the

unit figure of each of the preceding totals affixed—one after the other, reading upward. For example: We will suppose the following amounts to be the sums total of certain columns of figures in an example, and that they come in order, one under the other, as here placed, 98, 120, 65, 24,—the sum total is 24508. In putting down the sum total of each column in this manner, the amount to be carried to the next column is the figures to the left of the unit number—in the first above, it is 9; in the second, 12, and so on. The object in putting down the totals in this manner is, that if in going over the addition a second time, the second addition does not agree with the first, we are not obliged to commence again from the beginning, but may commence with the figures to the left of the unit number in the column preceding and "try it again."

MULTIPLICATION.

860. To multiply by any number between 10 and 20, multiply by the unit figure; set the product thus found one place to the right, under the multiplicand, and add. The sum will be the answer. For example: In multiplying 324 by 17, we simply multiply by 7 in the manner above indicated, thus:

324
2268
5508

In order to give an idea of rapid calculation in multiplication a few examples will here be given, and from these others may be created without limit by any one:

35 yards cloth @ \$2.50 Add one cipher and divide by 4. Answer, 87½ or \$87.50.

216 " @ \$2.25. Multiply 2¼\$ by setting down the amounts thus
432
54
\$486

48 " @ \$2.12½. Multiply by 2⅛\$ in the same manner as by 2¼\$.

55 " @ \$1.95. Move decimal point in price two places to the right, divide 195 by 2 and add $\frac{1}{10}$ thus:
97.50
9.75
\$107.25

162 " @ \$1.80. Multiply by 2 and deduct $\frac{1}{10}$ thus:
324
32.40
\$291.60

36 yards cloth @ $1.75. Multiply by 2 and deduct $\frac{1}{8}$, thus :

72
9

$63

29 " @ 1.62\frac{1}{2}$. Add $\frac{1}{2}$ and $\frac{1}{8}$ to the whole, thus :

29
14.50
3.62$\frac{1}{2}$

$47.12

114$\frac{1}{2}$ " @ $1.50. Add $\frac{1}{2}$, thus :

114.50
57.25

$171.75

37$\frac{3}{4}$ " @ $1.25. Add $\frac{1}{4}$, thus :

37.75
9.44

$47.19

83 " " @ $1.20. Add $\frac{1}{5}$, thus :

83
16.60

$99.60

50 " " @ $1.18. Find $\frac{1}{2}$ of $118=$59

75 " " @ $1.14. Deduct from $114, $\frac{1}{4}$ of that amount, thus:

114
28.50

$85.50

24 " " @ 95c. Deduct $\frac{1}{20}$ from $24, thus:

24
1.20

$22.80

68$\frac{1}{2}$ " " @ 75c. Deduct $\frac{1}{4}$, thus :

68.50
17.12

$51.38

46 " " @ 55c. Find $\frac{1}{2}$ and add the same $\frac{1}{10}$, thus :

23
2.30

$25.30

32 " " @ 45c. Find $\frac{1}{2}$ and deduct $\frac{1}{10}$, thus :

16
1.60

$14.40

96 " " @ 25c. Find $\frac{1}{4}$ of $96=$24.

The reasons for making the computations in this manner will at once be apparent, from the fact that when the price is either more or less than $1, the fractional part of a dollar is either taken from, or added to, the amount that the sum would be if @ $1 per yard. It is sometimes more convenient

to call the number of yards the price, and the price the number of yards, in order to make the computation, as in the example above; 50 yards @ $1.18 would be the same as 118 yards @ 50c.; or to say, if 100 yards @ $1.18 would be $118, 50 yards would be half of that amount, or $59. In the first example we say, if 35 yards @ $10 per yard would be $350, at $2.50 per yard, it would be one-fourth of that amount, or $87.50.

INTEREST.

861. To find the interest on any amount, at any rate per cent., for any length of time:

First. Reduce time to run on interest to months and tenths of a month. To find the number of tenths of a month, divide the number of days over a month by *three*, then add to the number of months the tenths, in *decimal* form.

Second. Move the decimal point between dollars and cents in the principal two places to the left, divide this amount by *twelve*, and multiply by the rate per cent.; multiply this amount by the number of months, as found above, and the product will be the answer.

EXAMPLE.—$360.00 @ 7 ℘ cent. for 2 years, 5 months and 18 days.
SOLUTION.—2 years, 5 months and 18 days equals 29.6 months.

12)3.60 (Move decimal point two places to the left.)

.30 (Divide by 12),
.7 (Multiply by the rate per cent.)

2.10—Interest on principal for one month.

If $2.10 for one month, for 29.6 months it would be 29.6 times $2.10 or $62.16—ANSWER.

AT TEN PER CENT.

First. Find the number of months and tenths of a month as in preceding item.

Second. Move decimal point between dollars and cents in principal *one* place to the left, divide by *twelve*, then multiply this amount by the number of months, as found in "first," and the product will be the answer.

EXAMPLE.—$600.00 @ 10 ℘ cent., from August 7, 1877, to January 28, 1879.
SOLUTION.—From August 7, 1877, to January 28, 1879, is one year, 5 months and 21 days, which equals 17.7 months.

12)60.00 (Move decimal point one place to the left.)

5 (Divide by *twelve*.) Which equals interest on the principal for one month.

If $5 for one month, for 17.7 months it would be 17.7 times $5, which equals $88.50 —Answer.

OTHER EXAMPLES.—Required, the interest on a note for $267.50, running 93 days at 10 ℘ cent.; 93 days equals 3.1 months.

12)26.75

2.23

3.1

223
669

$6.913—

Required, the interest on a note for $182.39, running 7 months and 7 days; 7 months and 7 days equals 7.23 months

12)18.24

1.52
7.23

456
304
1064

$10.9896

If the number of days over a month are not divided by *three*, continue the decimal one or two places. In many examples, both multiplier and multiplicand, *i.e.* months and rate per month, can be calculated in the head.

VALUABLE TABLES FOR REFERENCE.

VALUE.

UNITED STATES.

862. The term "currency" is applied to money of all kinds employed in trade, both coin and paper.

TABLE.

10 mills (m.)	make	1 cent	ct.
10 cents	"	1 dime	d.
10 dimes	"	1 dollar	$.
10 dollars	"	1 eagle	E.

CANADA.

863. The currency of Canada since 1859 has been decimal, and the denominations the same as those of the United States.

864. ENGLISH.

TABLE.

4 farthings (far. or qr.)	make 1	penny.....d
12 pence	" 1	shilling .....s.
20 shillings	" 1	pound, or sovereign..£, or sov.

FRENCH.

865. The unit is the *Silver Franc.*

TABLE.

10 millimes	make 1	centime.....ct.
10 centimes	" 1	decime.....dc.
10 decimes	" 1	franc.....fr.

A franc is equal to $·193 United States currency.

GERMAN EMPIRE.

866. The unit is the "Mark," equal to 23.85 cents United States money. The coins are: *Gold*—the 20, 10, and the 5-mark pieces; *Silver*—the 2 and the 1-mark, and the 20-penny pieces; *Nickel*—the 10 and the 5-penny, and pieces of less value.

MEASURES OF EXTENSION.

867. LINEAR.

TABLE.

12	inches (in.)	make 1 foot.....ft.
3	feet	" 1 yard.....yd.
5½	yards, or 16½ feet,	" 1 rod .....rd.
40	rods	" 1 furlong .....fur.
8	furlongs, or 320 rods,	" 1 statute mile .....mi.

868. The following denominations are also in use:

3 barleycorns make one inch; used by shoemakers in measuring the length of the foot.

4 inches make 1 hand ; used in measuring the height of horses directly over the fore feet.

6 feet make 1 fathom ; used in measuring depths at sea.

1.15 statute miles make 1 geographic mile ; used in measuring distances at sea.

3 geographic miles make 1 league.

60 geographic miles make 1 degree } of latitude on a meridian or of longitude on the
69.16 statute " " " } equator.

360 degrees make the circumference of the earth.

869. SURVEYOR'S LONG.

TABLE.

7.92	inches (in.)	make	1	link.....l.
25	links	"	1	rod.....rd.
4	rods, or 66 feet,	"	1	chain..... ..... ch.
80	chains	"	1	mile.....mi.

870. SQUARE.

TABLE.

144	square inches (sq. in.)	make	1	square foot, marked	sq. ft.
9	square feet	"	1	square yard, "	sq. yd.
30¼	square yards	"	1	square rod, "	sq. rd.
40	square rods	"	1	rood, "	R.
4	roods	"	1	acre, "	A.
640	acres	"	1	square mile, "	sq. mi.

SURVEYOR'S SQUARE.

871. Used in computing the area or contents of land.

TABLE.

625	square links (sq. l.)	make	1	pole .....P.
16	poles	"	1	square chain ..sq. ch.
10	square chains	"	1	acre ..... A.
640	acres	"	1	square mile.....sq. mi.
36	square miles (6 miles square)	"	1	township.....Tp.

A square mile of land is also called a section.

CUBIC.

872. Used in estimating the contents of solids, as timber, wood, etc.

TABLE.

1728	cubic inches (cu. in.)	make	1	cubic foot..... .....cu. ft.
27	cubic feet	"	1	cubic yard.....cu. yd.

16	cubic feet	make 1 cord foot ....cd. ft.
8 cord feet, or 128	cubic feet,	" 1 cord of wood..... ..cd.
24¾	cubic feet	" 1 perch of stone or masonry...pch.

A load of earth is one cubic yard.

A pile of wood 8 feet long, 4 feet wide and 4 feet high is a cord.

A perch of stone or of masonry is 16½ feet long, 1½ feet wide and 1 foot high.

MEASUREMENTS OF CAPACITY.

873.

LIQUID.

TABLE.

4	gills (gi.)	make 1 pint.....pt.
2	pints	" 1 quart.....qt.
4	quarts	" 1 gallon .....gal.
31½	gallons	" 1 barrel .....bbl.
2	barrels, or 63 gallons,	" 1 hogshead.....hhd.

4. The followiug dimensions are also in use:

TABLE.

36 gallons	make 1 barrel of beer.
54 gallons, or 1½ barrels,	" 1 hogshead of beer.
42 gallons	" 1 tierce.
2 hogsheads, or 120 gallons,	" 1 pipe or butt.
2 pipes, or 4 hogsheads	" 1 tun.

WEIGHTS.

TROY.

875. Used in weighing gold, silver, and jewels, etc.

TABLE.

24	grains (gr.)	make 1 pennyweight.....pwt. or dwt.
20	pennyweights	" 1 ounce.....oz.
12	ounces	" 1 pound.....lb.
175	ounces troy	=144 ounces avoirdupois.

APOTHECARIES.

876. Used by apothecaries and physicians in compounding medicines.

TABLE.

20 grains (gr.)	make	1 scruple.....	sc.
3 scruples	"	dram.....	dr.
8 drams	"	ounce.....	oz.
12 ounces	"	pound.....	lb. or lb.

AVOIRDUPOIS.

877. Used for general purposes of weighing.

TABLE.

16 drams (dr.)	make	1 ounce	oz.
16 ounces	"	1 pound	lb.
100 pounds	"	1 hundred weight..	cwt.
20 cwt., or 2000 lbs,	"	1 ton.....	T.

LONG TON TABLE.

28 pounds	make	1 quarter..marked..	qr.
4 quarters—112 lbs.	"	1 hundred weight..	cwt.
20 cwt.—2240 lbs.	"	1 ton.....	T.

878. The following denominations are also in use :

TABLE.

100 pounds	of	grain or flour	make	1 centnal.
100 "		dry fish	"	1 quintal.
100 "		nails	"	1 keg.
196 "		flour	"	1 barrel.
200 "		pork or beef	"	1 barrel.
240 "		lime	"	1 cask.

879.

TIME.

TABLE.

60 seconds (sec.)	make	1 minute	min.
60 minutes	"	1 hour.	h.
24 hours	"	1 day.....	da.

7 days	make	1 week .....wk.
365 days	"	1 common year.....yr.
366 days	"	1 leap year.....yr.
12 calendar months	make	1 year .....yr.
100 years	"	1 century.....C.

CIRCULAR.

880. Used in surveying, navigation, astronomy, and geography.

TABLE.

60 seconds (″)	make	1 minute .....′
60 minutes	"	1 degree.....°.
30 degrees	"	1 sign .....S.
12 signs, or 360°,	"	1 circle .....C.

COUNTING.

881.

TABLE.

12 units, or things,	make	1 dozen.
12 dozen	"	1 gross.
12 gross	"	1 great gross.
20 units	"	1 score.

PAPER.

882.

TABLE.

24 sheets.....	make.....	1 quire.
20 quires	"	1 ream.
2 reams	"	1 bundle.
5 bundles	"	1 bale.

BOOKS.

883. The terms *folio, quarto, octavo, duodecimo,* etc., show the number of leaves into which a sheet is folded.

A sheet folded in 2 leaves is called a folio.
A sheet folded in 4 leaves is called a quarto, or 4to.

A sheet folded in 8 leaves is called an octavo, or 8vo.
A sheet folded in 12 leaves is called a 12 mo.
A sheet folded in 16 leaves is called a 16 mo.
A sheet folded in 18 leaves is called an 18 mo.
A sheet folded in 24 leaves is called a 24 mo.
A sheet folded in 32 leaves is called a 32 mo.

FOREIGN MONEY.

884. Value of foreign money on a gold basis.

Pounds Sterling, of England	$4.84
Guinea, "	5.05
Crown, "	1.21
Shilling, "	.22
Napoleon, of France	3.84
Five Francs, "	.93
Franc, "	.18½
Thaler, of Saxony	.68
Guilder, of Netherland	.40
Ducat, of Austria	2.28
Florin "	.48½
Doubloon of Spain (1800)	15.54
Real, "	.05
Five Rubles, of Russia	3.95
Ruble "	.75
Franc, of Belgium	.18½
Ducat of Bavaria	2.27
Franc, of Switzerland	.18½
Crown, of Tuscany	1.05½

VALUE OF UNITED STATES MONEY.

885. GOLD COIN U. S. STANDARD.

Double Eagle	$20.00	516 grains.
Eagle	10.00	258 "
Half Eagle	5.00	129 "
Three Dollar Piece	3.00	77.4 "
Quarter Eagle	2 50	64.5 "
Dollar	1.00	25.8 "
Value per grain	0.0387596	1 "
Value per ounce	18.6046	480 "

886. SILVER COIN U. S. STANDARD.

One Dollar (Trade)	100	cents	420 grains.
One Dollar (Legal Tender)	100	"	412½ "
Half Dollar (5 dimes)	50	"	192 "
Quarter Dollar (2½ dimes)	25	"	96 "
One Dime	10	"	38.4 "
Half Dime	5	"	19.2 "
Three Cent piece	3	"	11.52 "
Value per grain	0.260416		1 "
Value per ounce	1.25		480 "

887. COPPER COIN.

Copper Cent	1	cent	168 grains.
Value per grain	0.005952		1 "

888. The standard fineness of gold and silver is one weight alloy to nine of pure metal. The alloy for gold is silver or copper. Alloy for silver is copper.

ON AVERAGING ACCOUNTS.

889. Averaging accounts or equation of payments consists in finding the common time of maturity of bills due at different times. The method most commonly in use for finding average date of payment is the "Interest Method," which method will be hereinafter described and illustrated. Any rate per cent. of interest may be used in order to arrive at the result, but one per cent. per month is thought to be the best rate, for the reason that a result may be found quicker with that rate than any other. The method of figuring at this rate will be hereinafter described.

890. The kind of an example that most commonly presents itself, is the one in which there are several bills either bought by us, or sold by us *on time;* and for which bills we wish to ascertain the common date due, or the date upon which the sum total of all the bills will be due—our object in finding this date being in order that we may give a note, or accept a draft if it be an account we owe; or take a note from, or make a draft on the person if it be an account that is owing us. The rules for finding the average date due for this kind of an example will here be given, and following same will be an illustration in the form of an account *we owe.*

891. 1st.—Find the dates the bills are due, and write the same on a slip of paper, with the amounts opposite.

892. 2nd.—Take the bill *latest due* as the basis upon which to work. It is advisable to indicate this "basis" by boxing it, or drawing a line around it.

893. 3rd.—Find the number of days each bill falling due previous to the "basis" has to run from its date due, up to the "basis," and compute interest on same at the rate of one per cent. per month, calling a month 30 *days;* after which, find the sum total of these several *interest amounts.*

894. 4th.—Find the sum total of all the bills; then cut off or draw a line through the cents and the unit number of the dollars. After which divide this amount by 3, place the decimal point two places to the left in the product thus found, which will give the interest on the total amounts of the bills for *one day* at one per cent. per month.

895. 5th.—Divide the sum total of the interest due on all the bills as found in 893, by the interest on all the bills for *one day* as found in 894, and the product thus found will be the number of days to count *backward* from the "basis" (892) to find the average date of payment, or the date all the bills fall due by equation.

896. ILLUSTRATION.—JOHN MACDONALD.

			1883.				
			Jan.	5	60 days,	24	200 00
				20	30 "	46	150 00
			Feb.	14	90 "	59	320 00
			March	6	60 "	65	230 00
							900 00

(See 891 and 892.) (See 893.)

March 6,	$200	70 days,	$4.69	
Feb'y 19,	150	85 "	4.25	
May 15,	320			
May 5,	230	10 days,	76	
(See 894)	3)90.0		30)9.68	(See 895)
	.39		32	

This gives 32 days to count backward from the "basis" (May 15) to find the average date the bills are due, which is *April 13th.*

897. *Another example.*—There is another example that occurs less frequently, viz.: One which arises from *accounts current*, *i. e.*, accounts with persons to whom we sell goods on time and from whom we buy goods on time, also cash is paid on account by us or by them. Finding the average date of payment on an account of this kind consists in finding the date upon which the balance or the difference between the two sides is due,—the rules for finding same and the illustration are as follow:

898. 1st.—Find the dates the bills are due, and write the same on a slip of paper, with the amounts opposite—taking first one side of the account and then the other. If any *cash* payments, the dates put down on this slip for same are the dates upon which the payments were made.

899. 2d.—Same as 892—this "basis" being found either on the debit side or the credit, whichever presents the bill *latest due*.

900. 3d.—Same as 893—taking first one side of the account, and then the other, and keeping the figuring for the two sides separate.

901. 4th.—Find the difference between the sum total of the interest for the debit side of the account and the sum total of the interest for the credit side of same.

902. 5th.—Find the difference between the two sides of the account; then cut off or draw a line through the cents and the unit number of the dollars, after which divide this difference by 3, place the decimal point two places to the left in this product, which will give the interest on this balance for *one day* at one per cent per month.

903. 6th Divide the balance of interest as found in 901, by the interest on the balance of account for *one day*, as found in 902, and the product thus found will be the number of days to count *backward* from the "basis" (as found in 899) to find the average date of payment, or the date the account is due by equation.

904. ILLUSTRATION.—G. M. ROSE.

1883.						1883.					
Jan.	5	60,	38	350	00	Jan.	8	90 days,	46	240	00
	30	60,	65	200	00		23	" "	59	150	00
Feb.	7	Cash,	17	140	00	Feb.	10	Cash,	20	100	00
March	10	60,	83	110	00					490	00
April	5	30,	83	200	00						
				1090	00						

Dr.				Cr.			
(See 898)				(See 898.)			
March 6,	$350	64 days,	$7.47	April 8,	$240	31,	$2.48
" 31,	200	39 "	2.60	April 23,	150	16,	.80
Feb'y 7,	140	91 "	4.25	Feb'y 10,	100	88,	2.93
[May 9,]	110						
" 5,	290	4 days,	39		490		6.21
(See 902)	1090		14.71	(See 900 and 901).			
	490		6.21				
	3(60)0		20)8.50	(See 903).			
	20		42				

This gives 42 days to count backward from the "basis" (May 9th) to find the date upon which the account is due by equitation, or the average date of payment, which is *March 28th.*

905. On averaging a past-due account, for the purpose of finding the interest due, the average date when the account was due is first found, after which we compute the interest on the account, from that date up to the present at whatever rate per cent. agreed upon; then, if it be an account owing us, we charge the same for the interest thus found; or if it be an account we owe, we credit the same for the interest.

906. On averaging an account not yet due, for the purpose of settling by note or acceptance, the average date when the account will be due is first found; then the note is either dated backward from that date the number of days we wish the note to run, or dated on the present date, and made to read in such a manner that it will fall due on the average date due.

907. The three days of grace is not added when averaging an account; but it may be added after the average date is found, if we wish to do so.

908. *Explanation of the "Interest Method" of Averaging Accounts.*— We find the bill latest due, and taking this as a basis or foundation upon which to work, suppose all amounts prior to that to run from their respective dates due up to this "basis" date before they are paid, and thereupon we charge or credit, as the case may be, interest on such amounts for the time they thus run past due. After we have thus found the total interest due, we find the interest on the amount of the account *for one day.* Now we see by paying the sum total of all the bills just one day backward from this "basis" date, there will be due the interest for one day *less*, and consequently, we ascertain how many days backward

from this "basis" date we will have to pay the total amount of the bills in order to consume all the interest, so that there would be interest neither owing to nor by us, by dividing the total interest due by the interest on the whole for one day.

909. *On computing interest at* 1 *per cent. per Month or* 12 *per cent. per Annum.*—We call a month thirty days; therefore at this rate per cent, the principal earns 1 per cent. every 30 days, and $\frac{1}{10}$ per cent. every 3 days; consequently to find the interest for 30 days, we simply move the decimal point between dollars and cents *two places to the left*, and for 3 days we move it *three places to the left*. With a very little practice, interest may be very rapidly computed at this rate per cent. In the example under 904, we first find the interest for 30 days on $350, which is $3.50; for 60 days it is twice that amount, or $7.00; and for 3 days 35c.; and 1 day, $\frac{1}{3}$ of 35c., which is 12c, Then we add 60 days, $7.00; 3 days. 35c.: 1 day 12 cents; total 64 days, $7.47. Then $2.00, 30 days; and for 3 days 20 cents.; 9 days, three times 3 days, and consequently, three times 20c., or 60c. Then we add 30 days, $2.00; 9 days, 60c.; total 39 days, 2.60. Then if $1.40 for 30 days, for 90 days it is three times that amount, or 4.20; and if 14 cents for 3 days, it is $\frac{1}{3}$ of that amount for 1 day, or 5c.; total 91 days, $4.25.

$290 for 3 days	29c.	
" 1 day, add $\frac{1}{3}$ of amount for 3 days,	10	
	39c.	
$240 for 30 days,	$2.40	
" 3 days 24c; for 1 day, $\frac{1}{3}$ of 24c	8	
	$2 48	
$150 for 30 days, $1.50; for 15 days, $\frac{1}{2}$ of $1.50, or		75c.
" 3 days, 15c.; for 1 day $\frac{1}{3}$ of 15c.,		5
		80
$100 for 30 days, $1.00; for 90 days,	$3.00	
" 3 days, 10c.; for 2 days $\frac{2}{3}$ of 10c.,	7	
	$2.93	

The foregoing illustration is deemed sufficient to make perfectly clear to the mind the 1 per cent. method of figuring interest, and when by continued practice the method has been thoroughly mastered, the old *torture* of averaging accounts is rendered, on the contrary, a *pleasure*.

Mercantile Law.

ADMINISTRATION OF ESTATES OF DECEASED PERSONS.

WHEN a person dies, leaving no valid will behind him his estate is distributed among his heirs by what is known as *operation of law*. This is regulated by the statute of the Province in which the deceased resided at the time of his death. The distribution must be made by an *administrator* duly appointed by law. The administrator is appointed by the court having jurisdiction in such cases on being satisfied that the person proposed is legally qualified. The appointment must be made with the *consent* of the person appointed. It is the generally accepted rule that any one is legally competent to be an administrator who is competent to make a contract. The relatives of the deceased are considered as entitled to the appointment to administer the estate.

If letters of administration should be unduly granted they may be revoked.

Administration may likewise be granted on certain conditions, for a certain limited time, or for a special purpose.

The powers and duties of an administrator differ from those of an executor only inasmuch as he must distribute and dispose of the entire estate according to the direction of the law, as he has no will to follow.

The administrator must give bonds with sureties for the faithful execution of his trust.

Having liquidated all the debts of the intestate, the administrator will divide the remainder of the assets among the surviving relatives of the deceased. In so doing, he will act under the direction of the court.

AGENCY.

By Agency is meant the substitution of one person by and for another, the former to transact business for the latter. An Ageney may be established by *implication*—an express agreement with a person that he is to

become the agent of another not being necessary—or *verbally*, or by *writing*. A verbal creation of agency suffices to authorize the agent to make a contract even in cases where such contract must be in writing.

Agency is of three different kinds: special, general, and professional. A special agency is an authority exercised for a special purpose. If a special agent exceed the limits of his authority, his principal is not bound by his acts.

A general agency authorizes the transaction of all business of a particular kind, or growing out of a particular employment. The principal will be bound by the acts of a general agent though the latter act contrary to *private* instructions, provided he keep, at the same time, within the general limits of his authority.

Professional agents are those licensed by the proper authority to transact certain kinds of business for a compensation. The following are among this class of agents:

1. Attorneys.
2. Brokers.
3. Factors.
4. Auctioneers.
5. Masters of Ships.

In regard to the subject of an agency, the general rule is that whatever a man may do in his own right, he may also transact through another. Things of a personal nature, implying personal confidence on the part of the person possessing them, cannot be delegated.

Infants, married women, lunatics, idiots, aliens, and persons incapable of making legal contracts, cannot act as principals in the appointment of agents. Infants and married women may, however, become principals in certain cases.

Agency may be terminated in two ways: (1) by the act of the principal or agent; (2) by operation of law. In the latter case the termination of the agency is effected by lapse of time, by completion of the subject matter of the agency, by the extinction of the subject matter or by the insanity, bankruptcy, or death of either party.

ARBITRATION.

Arbitration is an investigation and determination of subjects of difference between persons involved in dispute, by unofficial persons chosen by the parties in question.

The general rule is that any person capable of making a valid contract concerning the subject in dispute may be a party to an arbitration. Any

matter which the parties may adjust by agreement, or which may be made the subject of a suit at law, may be determined by arbitration. Crimes cannot be made the subject matter of an arbitration.

Questions may be submitted for arbitration in the following ways :

1. By *parol.*

2. By *writing.*

3. *Under the statute*, which must be done if the parties are desirous of availing themselves of its provisions. (This is, where a suit is pending.)

4. *By rule of court*, which occurs when an action is pending in court and the parties agree to take it before arbitrators, in accordance with an order of the court.

5. *By deposit of notes.*

A person may be selected as arbitrator, notwithstanding his natural incapacity or legal disability to make contracts,

The arbitrators must fix the time and place of hearing, and give due notice of the same to the parties. They must be sworn, if the statute requires an oath, unless such oath is waived by the parties themselves. In the matter of hearing evidence the statute must be followed.

The arbitrators may adjourn from time to time, provided the time does not extend beyond the period appointed for the delivery of the award.

In arbitrations the parties are entitled to the aid of *counsel*, the same as they would be in court.

After a fair submission and a legal award, the matter submitted cannot be litigated on, any more than if it had been settled by a judgment.

An award may be impeached where it has been procured by corruption, fraud, or other undue means ; by misconduct, corruption or irregularity on the part of the arbitrators when the arbitrators acknowledge they have made a mistake in their decision ; where the arbitrators have exceeded their powers ; where pertinent and material evidence was rejected, etc. If either party revokes the submission, he will be liable for an action for breach of contract, and the payment of damages to the other party.

ARREST.

The defendant in a civil action may be arrested under Revised Statutes (Ont.) cap. 67, also in an action wherein the judgment requires the performance of an act, the neglect or the refusal to perform which would be punishable by the court as contempt.

The defendant, when arrested, may give bail.

ATTACHMENT.

An attachment may be issued, when it is a question of recovering a sum of money, for damages, in the following cases:

1. Under cap. 68, Revised Statutes, Ontario, and under the Common Law Procedure Act, Revised Statutes, Ontario, cap. 50.

The plaintiff must prove that a cause of action exists under one of the above statutes, before he is entitled to a warrant of attachment. In case of an action to recover damages, his affidavit must show that he is entitled to recover a sum therein stated over and above any or all counter claims against him. In addition that he has left the Province with the intention of defrauding his creditors, or avoiding being served with a summons, or that he keeps himself concealed within the Province with like intent. If the defendant is a natural person or a domestic corporation, the affidavit must show that he or it has removed his or its property from the Province with the intention of defrauding his or its creditors, or that he has assigned, disposed of, or secreted his property, or that he is about to do so with like intent.

CHATTEL MORTGAGES.

A mortgage of goods and chattels will be void to creditors of the mortgagee, if the following conditions are not complied with:

1. The filing of the mortgage, or a true copy thereof, as required by law in the County Court clerk's office of the town, city or county where the mortgagor resides, and where the property lies at the time the instrument was executed, if he is a resident of the Province; if not, it must be filed in the city or town where the property is located at the time of the execution of the mortgage.

2. The mortgage not being filed within five days from the execution thereof.

CONTRACTS.

The conditions of a contract, as applying to individuals, are: 1. Age; 2. Rationality; and 3, as to Corporations, the possession of general or special statutory powers.

Persons under age are incompetent to make contracts, except under certain limitations. Generally such persons are incapable of making binding contracts.

As to rationality, the general principle of law is that all persons not rendered incompetent by personal disability, or by considerations of public policy, are capable of making a contract.

Corporations have powers to make contracts strictly within the limits prescribed by their charters, or by special or general statute. The following classes of contracts are void, unless they shall be in writing and subscribed by the party to be charged thereby:

1. Every agreement that by its terms is not to be performed within one year from the making thereof.

2. Every special promise to answer for the debts, default, or miscarriage of another person.

3. Every agreement, promise or undertaking, made upon consideration of marriage, except mutual promise to marry.

4. Every contract for the leasing of a longer period than one year, or for the sale of any lands, or any interest in lands, shall be void, unless the contract, or some note or memorandum thereof, expressing the consideration, be in writing and subscribed by the party by whom the lease or sale is made.

INTEREST AND USURY.

Interest is a *moderate* profit for the use of money. In the Dominion the rate of interest is established by statute. Six per cent. is the legal rate of interest. An excess of interest above the legal rate may be recovered by an action at law.

LIEN LAWS.

Any one who, as contractor, sub-contractor, or labourer, performs any work, or furnishes any materials, in pursuance of, or in conformity with, any agreement or contract with the owner, lessee, agent, or one in possession of the property, toward the erection, altering, improving, or repairing of any building, shall have a lien for the value of such labour or materials on the building or land on which it stands, to the extent of the right, title and interest of the owner, lessee or person in possession at the time of the claimant's filing his notice with the Registrar of Deeds of the County where the property is situated.

This notice should be filed within thirty days after completion of the work, or the furnishing of the materials, and should state the residence of the claimant, the amount claimed, from whom due, when due, and to whom due, the name of the person against whom claimed, the name of the owner, lessee or person in possession of the premises, with a brief description of the latter.

Liens cease in ninety days after the filing of the notice, unless an action is begun, or the lien is continued by an order of Court.

The following classes of persons are generally entitled to lien:

1. Bailees, who may perform labour and services on the thing bailed, at the request of the bailor.

2. Innkeepers, upon the baggage of guests they have accommodated.

3. Common carriers, upon goods carried, for the amount of their freight and disbursements.

4. Vendors on the goods sold for payment of the price where no credit has been expressly promised or implied.

5. Agents, upon goods of their principals, for advancements for the benefit of the latter.

6. All persons are entitled to the right of lien who are compelled by law to receive property, and bestow labour or expense on the same.

The right of lien may be waived:

1. By express contract.
2. By neglect.
3. By new agreement.
4. By allowing change of possession.
5. By surrendering possession.

The manner of the enforcement of a lien, whether it be an innkeeper's, agent's, carrier's, factor's, etc., depends wholly upon the nature and character of the lien.

LIMITATION OF ACTION—WHEN A DEBT IS OUTLAWED.

Actions upon judgments or decrees of a court, or a contract under seal, or for the recovery of real estate, must be commenced within a period of ten years from the date when the cause of action accrued.

All actions upon unsealed contracts, express or implied, become outlawed in six years.

Claims for damages to property become outlawed in six years.

Claims for the specific recovery of personal property and on judgments of courts not of record, are outlawed in six years.

In the case of enforcing the payment of a bill, note, or other evidence of debt that may be issued by a moneyed corporation, or to enforce the payment of same issued or put in circulation as money, there is no limitation of time to sue.

An acknowledgement or new promise cannot take a contract or other liability out of the statute of outlawry, unless it be in writing.

A payment on account of principal or interest takes the case out of the statute, without being in writing.

NOTES AND BILLS OF EXCHANGE.

Notes are, as a rule, entitled to three days' grace—that is, the note is not payable till the third day after the day expressed for its payment. Notes made payable "on demand" are not entitled to grace.

In the following cases there are no days of grace:

1. Bills of exchange or drafts, payable at sight at any place within the Dominion shall be deemed due and shall be payable on presentation, without the allowance of any days' grace.

2. Checks, bills of exchange or drafts appearing on their face to have been drawn upon any bank, or banking association, or banker, carrying on banking business under the act to authorize the business of banking, which are on their face payable on any specified day, or in any number of days after the date or sight thereof, shall be deemed due and payable on the day mentioned for payment of same without any days of grace being allowed nor shall it be necessary to protest the same for non-acceptance.

When the last of the days of grace falls on Sunday, or any leading public holiday when general business is suspended, the presentment for payment must be made on the Saturday preceding the Sunday, or the day preceding the holiday.

As a general rule, the note or bill must be presented for payment on the last of the days of grace, and the drawers and endorsers must be notified of non-payment not later than the following day.

Notes and bills, when made payable to or at any person's order and endorsed in blank, pass by delivery.

The words "value received," though ordinarily used, are not indispensable, as value is held to be implied.

Notes do not bear interest except when it is so stated. After maturity all notes bear legal interest.

The holder of a note that is made payable to order may sue in his own name.

A promissory note given by a minor is void.

The indorser of an accommodation is a surety for the maker, and he is liable to the costs of collection that may be brought against such maker or indorser.

Any promise to pay, without specifying the time of payment, is equivalent to a promise to pay on demand.

PARTNERSHIP.

The general rule is that every person of sound mind, and not otherwise restrained by law, may enter into a contract of partnership.

There are several kinds of partners, which may be classed as follows:

1. *Ostensible* partners, or those whose names are made public as partners, and who in reality are such, and who take all the benefits and risks.

2. *Nominal* partners, or those who appear before the public as partners, but who have no real interest in the business.

3. *Dormant*, or *silent* partners, are those whose names are not known or do not appear as partners, but who, nevertheless, have an interest in the business.

Special partners, or those who are interested in the business only to the amount of the capital they have invested in it.

5. *General* partners, who manage the business, while the capital, either in whole or in part, is supplied by a special partner or partners. They are liable for all the debts and contracts of the firm.

A nominal partner renders himself liable for all the debts and contracts of the firm.

A dormant partner, if it becomes known that he has an interest, whether creditors trusted the firm on his account or not, becomes liable equally with the other partners.

The partnership firm is responsible for any acts done by any partner, touching the partnership business.

The representation or misrepresentation of any fact made by any partner within the scope of the business, is binding on the firm.

A notice to or by any of the firm is deemed a notice to or by all of them.

Each partner is liable to third parties for the whole partnership debt.

The articles of partnership must in all cases be in writing.

Forms of Legal Documents.

GENERAL FORM OF AGREEMENT.

THIS AGREEMENT, made the ——— day of ——, one thousand eight hundred and eighty-two, between JOHN DOE, of the —— of ——, in the county of ——, and ———, of the first part, and RICHARD ROE, of the —— of ——, in the said —— of the second part—

WITNESSETH, that the said JOHN DOE, in consideration of the covenants on the part of the party of the second part, hereinafter contained, doth covenant and agree to and with the said RICHARD ROE, that [*here insert the agreement on the part of John Doe*].

And the said RICHARD ROE, in consideration of the covenants on the part of the party of the first part, doth covenant and agree to and with the said JOHN DOE, that [*here insert the agreement on the part of Richard Roe*].

In witness whereof, we have hereunto set our hands and seals, the day and year first above written.

Sealed and delivered in presence of JOHN SMITH, THOS. BROWN. } JOHN DOE. [L.S.] RICH'D. ROE. [L.S.]

[*When required this clause may be inserted :*]

And it is further agreed between the parties hereto, that the party that shall fail to perform this agreement on his part, will pay to the other the full sum of *fifty* dollars, as liquidated, fixed and settled damages.

AGREEMENT FOR THE PURCHASE OF A HOUSE AND LOT.

MEMORANDUM of an agreement made this —— day of ———, in the year 18— between ——, of the —— of ——, and ———, of the ——, *witnesseth*—That the said —— agrees to sell, and the said —— agrees to purchase, for the price or consideration of —— dollars, the house and lot known and distinguished as number ———. The possession of the property is to be delivered on the —— day of —— next, when —— per cent. of the purchase-money is to be paid in cash, and a bond and mortgage on the premises, bearing —— per cent. interest, payable in ——— years (such interest payable quarterly), is to be executed for the balance of the purchase-money, at which time also a deed of conveyance in fee simple, containing the usual full covenants and warranty is to be delivered, executed by the said ——— and wife, and the title made satisfactory to the said ———; it being understood that this agreement shall be binding upon the heirs, executors, administrators, and assigns of the respective parties ; and also that the said premises are now insured for ——— dollars, and, in case the said house should be burnt before the said —— day of —— next, and the said ——— shall hold the said insurance in trust, and will then transfer the same to said ——— with the said deed.

In Witness, &c., [*as in General Form*].

AGREEMENT FOR THE SALE OF REAL ESTATE.

ARTICLES of agreement made and entered into this —— day of —— between A. B., of ——, of the one part, and C. D., of ——, of the other part, as follows :— The said A. B. doth hereby agree with the said C. D. to sell him the lot of ground [here describe it], for the sum of ——; and that he, the said A. B., shall and will, on the —— day of —— next, on receiving from the said C. D. the said sum, at his own cost and expense, execute a proper conveyance for the conveying and assuring the fee simple of the said premises to the said C. D., free from all encumbrances, which conveyance shall contain a general warranty and the usual full covenants. And the said C. D. agrees with the said

A. B. that he, the said C. D., shall and will, on the said —— day of —— next, and on execution of such conveyance, pay unto the said A. B. the sum of —— aforesaid. And it is further agreed between the parties aforesaid, as follows : The said A. B. shall have and retain the possession of the property, and receive and be entitled to the rents and profits thereof, until the said —— day of —— next ; when, and upon delivery of the conveyance, the possession is to be delivered to the said C. D. And it is understood that the stipulations aforesaid are to apply to and to bind the heirs, executors, and administrators of the respective parties. And in case of failure, the parties bind themselves each unto the other in the sum of ——, which they hereby consent to fix and liquidate the amount of damages to be paid by the failing party for his non-performance.

In witness, &c. [*as in General Form*].

AGREEMENT FOR BUILDING A HOUSE.

Memorandum.—That on this —— day of ——, it is agreed between A. B., of ——, and C. D., of ——, in manner following, viz. : the said C. D. for the considerations hereinafter mentioned, doth for himself, his heirs, executors, and administrators, covenant with the said A. B , his executors, administrators, and assigns, that he the said C. D. or his assigns, shall and will, within the space of —— next after the date hereof, in a good and workmanlike manner, and at his own proper charge and expense, at ——, well and substantially erect, build, and finish, one house or messuage, according to the draught, scheme, and explanation hereunto annexed, with such stone, brick, timber, and other materials, as the said A. B. or his assigns shall find and provide for the same. In consideration whereof, the said A. B. doth for himself, his executors, and administrators, covenant with the said C. D., his executors, administrators, and assigns, well and truly to pay unto the said C. D., his executors, administrators, and assigns, the sum of —— of lawful money of —— in manner following, viz. : —— part thereof at the beginning of the said work ; —— another part thereof when the said work shall be half done ; and the remaining —— in full for the said work, when the same shall be completely finished : and also that he, the said A. B., his executors, administrators, or assigns, shall and will from time to time, as the same shall be required, at his and their own proper expense, find and provide stone, brick, timber, and other materials necessary for making, building, and finishing the said house. And for the performance of all and every the articles and agreements above mentioned, the said A. B. and C. D. do hereby bind themselves, their executors, administrators, and assigns, each to the other, in the penal sum of —— firmly by these presents.

In witness, &c. [*as in Generl Form*].

AGREEMENT TO BE SIGNED BY AN AUCTIONEER, AFTER A SALE OF LAND AT AUCTION.

I hereby acknowledge that A. B. has been this day declared by me the highest bidder and purchaser of [*describe the land*], at the sum of —— dollars [*or*, at the sum of —— dollars —— cents per acre or foot], and that he has paid into my hands the sum of —— as a deposit, and in part payment of the purchase money; and I hereby agree that the vendor, C. D., shall in all respects fulfil the conditions of sale hereunto annexed. Witness my hand, at ——, on the —— day of ——, A. D. 18—.

J. S., *Auctioneer.*

ARTICLES OF COPARTNERSHIP.

Articles of copartnership made and concluded this —— day of ——, in the year one thousand eight hundred and sixty, by and between A. B., of the first part, and C. D , of the second part, both of ——, in the county of ——.

Whereas, it is the intention of the said parties to form a copartnership, for the purpose of carrying on the retail business of booksellers and stationers, for which purpose they have agreed on the following terms and articles of agreement, to the faithful performance of which they mutually bind and engage themselves each to the other, his executors and administrators.

First. The style of the said copartnership shall be "—— and company ;" and it shall continue for the term of —— years from the above date, except in case of the death of either of the said parties within the said term.

Second. The said A. B. and C. D. are the proprietors of the stock, a schedule of which is contained in their stock book, in the proportion of —— to the said A. B., and of —— to the said C. D.; and the said parties shall continue to be owners of their joint stock in the same proportions; and in case of any addition being made to the same by mutual consent, the said A. B. shall advance two-thirds, and the said C. D. one-third of the cost thereof.

Third. All profits which may accrue to the said partnership shall be divided, and all losses happening to the said firm, whether from bad debts, depreciation of goods, or any other cause or accident, and all expenses of the business, shall be borne by the said parties in the aforesaid proportions of their interest in the said stock.

Fourth. The said C. D. shall devote and give all his time and attention to the business of the said firm as a salesman, and generally to the care and superintendence of the store; and the said A. B. shall devote so much of his time as may be requisite, in advising, overseeing, and directing the importation of books and other articles necessary to the said business.

Fifth. All the purchases, sales, transactions, and accounts of the said firm shall be kept in regular books, which shall be always open to the inspection of both parties and their legal representatives respectively. An account of stock shall be taken, and an account between the said parties shall be settled, as often as once in every year, and as much oftener as either partner may desire and in writing request.

Sixth. Neither of the said parties shall subscribe any bond, sign or endorse any note of hand, accept, sign, or endorse any draft or bill of exchange, or assume any other liability, verbal or written, either in his own name or in the name of the firm, for the accommodation of any other person or persons whatsoever, without the consent in writing of the other party; nor shall either party lend any of the funds of the copartnership without such consent of the other partner.

Seventh. No importation, or large purchase of books or other things, shall be made, or any transaction out of the usual course of the retail business shall be undertaken by either of the partners, without previous consultation with, and the approbation of, the other partner.

Eighth. Neither party shall withdraw from the joint stock, at any time, more than his share of the profits of the business then earned, nor shall either party be entitled to interest on his share of the capital; but if, at the expiration of the year, a balance of profits be found due to either partner, he shall be at liberty to withdraw the said balance, or to leave it in the business, provided the other partner consent thereto, and in that case he shall be allowed interest on the said balance.

Ninth. At the expiration of the aforesaid term, or earlier dissolution of this copartnership, if the said parties or their legal representatives cannot agree in the division of the stock then on hand, the whole copartnership effects, except the debts due to the firm, shall be sold at public auction, at which both parties shall be at liberty to bid and purchase like other individuals, and the proceeds shall be divided, after the payment of the debts of the firm, in the proportions aforesaid.

Tenth. For the purpose of securing the performance of the foregoing agreements, it is agreed that either party, in case of any violation of them or either of them by the other, shall have the right to dissolve this copartnership forthwith, on his becoming informed of such violation.

In witness, &c. [*as in General Form*].

AGREEMENT TO CONTINUE THE PARTNERSHIP; TO BE ENDORSED ON THE BACK OF THE ORIGINAL ARTICLES.

Whereas, the partnership evidenced by the within-written articles has this day expired by the limitations contained therein [*or*, will expire on the —— day of —— next], it is hereby agreed, that the same shall be continued on the same terms, and with all the provisions and restrictions therein contained, for the further term of —— years from this date [*or* from the —— day of —— next].

In witness, &c. [*as in General Form*].

DEED WITHOUT COVENANTS.

This indenture, made the —— day of ——, in the year of our Lord one thousand ——, between A. B., of, &c., of the first part, and C. D., of, &c., of the second part, Witnesseth: That the said party of the first part, for and in consideration of the sum of fifty dollars, to him in hand paid, by the said party of the second part,

the receipt whereof is hereby acknowledged : hath bargained and sold, and by these presents doth bargain and sell, unto the said party of the second part, and to his heirs and assigns forever, all, &c. [*Here describe the property*]. Together with all and singular, the hereditaments and appurtenances thereunto belonging, or in any wise appertaining, and the reversion and reversions, remainder and remainders, rents, issues, and profits thereof ; and also all the estate, right, title, interest, claim, or demand, whatsoever, of him the said party of the first part, either in law or equity, of, in, and to, the above bargained premises, and every part and parcel thereof : To have and to hold to the said party of the second part, his heirs, and assigns, to the sole and only proper use, benefit, and behoof, of the said party of the second part, his heirs and assigns, forever.

In witness whereof, we have hereunto set our hands and seals, the day and year first above written.

Sealed and delivered in presence of
JOHN SMITH,
FRANK ROBINSON,

A. B. [L. S.]
C. D. [L. S.]

DEED OF LAND.

THIS INDENTURE, made (in duplicate) the day of in the year of our Lord one thousand eight hundred and in pursuance of the Act respecting short forms of conveyances between

Witnesseth that in consideration of dollars of lawful money of Canada now paid by the said part of the part to the said part of the first part (the receipt whereof is hereby by acknowledged) the said part of the first part do grant unto the said part of the part heirs and assigns, forever all and singular th certain parcel or tract of land and premises situate, lying and being

To have and to hold unto the said part of the part heirs and assigns, to and for their sole and only use forever, subject nevertheless, to the reservations, limitations, provisoes and conditions expressed in the original grant thereof from the Crown.

The said part of the first part covenant with the said part of the part That ha the right to convey the said lands to the said part of the part, notwithstanding any act of the said part of the first part ;

And that the said part of the part shall have quiet possession of the said lands, free from all incumbrances ;

And the said part of the first part covenant with the said part of the part that will execute such further assurances of the said lands as may be requisite ;

And the said part of the first part covenant with the said part of the part that ha done no act to incumber the said lands ;

And the said part of the first part release to the said part of the part all claims upon the said lands.

In witness whereof the said parties hereto have hereunto set their hands and seals.

Signed, sealed and delivered in the presence of

COUNTY OF } I,
To wit ; } make oath and say

1. That I was personally present and did see the within instrument and duplicate thereof duly signed, sealed and executed by

the parties thereto ;

2. That the said instrument and duplicate were executed at

3. That I know the said party;

4. That I am a subscribing witness to the said instrument and duplicate.

Sworn before me at in the County this day of in the year of our Lord 18 .

A Commissioner for taking affidavits in B.R., &c.

Received on the day of the date of this indenture from the said party of the part the sum of within mentioned.

Witness :

[L. S.]

MORTGAGE TO SECURE $ AND INTEREST.

THIS INDENTURE made (in duplicate) the day of in the year of our Lord One thousand Eight hundred and In pursuance of the Act respecting short forms of mortgages.
Between

Witnesseth that in consideration of lawful money of Canada now paid by the said Mortgagee to the said Mortgagor (the receipt whereof is hereby acknowledged) the said Mortgagor Do Grant and Mortgage unto the said Mortgagee heirs and assigns for ever.

All snd Singular th certain parcel or tract of land and premises situate lying and being

Provided this Mortgage to be void on payment of of lawful money of Canada with interest at per cent. per annum as follows

and Taxes and performance of Statute labour

The said Mortgagor Covenant with the said Mortgagee that the Mortgagor will pay the Mortgage money and interest and observe the above proviso. That the Mortgagor ha a good Title in fee simple to the said lands And that he ha the right to convey the said lands to the said Mortgagee And that on default the Mortgagee shall have quiet possession of the said lands free from all incumbrances. And that the said Mortgagor will execute such further assurance of the said lands as may be requisite.

And that the said Mortgagor ha done no act to incumber the said lands.
And that the said Mortgagor will insure the Buildings on the said lands to the amount of not less than Currency.
And the said Mortgagor Do Release to the said Mortgagee all claims upon the said lands Subject to the above Proviso: Provided that the said Mortgagee on default of payment for month may on Notice enter in and Lease or Sell the said lands: Provided that the Mortgagee may distrain for arrears of Interest: Provided that in default of the payment of the Interest hereby secured the Principal hereby secured shall become payable: Provided that until default of payment the Mortgagor shall have quiet possession of the said lands.

In witness whereof the said parties hereto have hereunto set their hands and seals
Signed sealed and delivered }
in the presence of }

Received on the day of the date of this Indenture from the Mortgagee the sum of Dollars mentioned.
Witness:

COUNTY OF } I
To wit: } make oath and say
1. That I was personally present and did see the within Instrument and Duplicate thereof duly signed sealed and executed by the parties thereto
2. That the said Instrument and Duplicate were executed at
3. That I know the said part
4. That I am a subscribing Witness to the said Instrument and Duplicate.
Sworn before me at in the County this day of in the year of our Lord 18

A Commissioner for taking Affidavits in B. R. &c.

ASSIGNMENT OF MORTGAGE.

THIS INDENTURE made in duplicate the day of in the year of our Lord one thousand eight hundred and eighty Between

hereinafter called the "Assignee," of the part

Whereas by a mortgage dated on the day of one thousand eight hundred and did grant and mortgage the land and premises therein and hereinafter described to heirs and assigns for securing the payment of and there is now owing upon the said mortgage

Now this indenture witnesseth, that in consideration of of lawful money of Canada now paid by the said assignee to the said assignor (the receipt whereof is hereby acknowledged), the said assignor

do hereby assign and set over unto the said assignee executors, administrators and assigns, all that the said before in part recited mortgage, and also the said sum of now owing as aforesaid, together with all moneys that may hereafter become due or owing in respect of said mortgage, and the full benefit of all powers and of all covenants and provisoes contained in said mortgage. And also full power and authority to use the name or names of the said assignor heirs, executors, administrators or assigns, for enforcing the performance of the covenants and other matters and things contained in the said mortgage. And the said assignor do hereby grant and convey unto the said assignee heirs and assigns, all and singular th certain parcel or tract of land and premises situate, lying and being

To have and to hold the said mortgage and all moneys arising in respect of the same and to accrue thereon, and also the said land and premises thereby granted and mortgaged to the use of the said assignee heirs, executors, administrators and assigns, absolutely for ever, but subject to the terms contained in such mortgage.

And the said assignor for heirs, executors, administrators and assigns do hereby covenant with the said assignee heirs, executors, administrators and assigns, that the said mortgage hereby assigned is a good and valid security, and that the said sum of is now owing and unpaid, and that ha not done or permitted any act, matter or thing whereby the said mortgage has been released or discharged either partly or in entirety; And that will upon request do perform and execute every act necessary to enforce the full performance of the covenants and other matters contained therein.

In witness whereof, the said parties have hereunto set their hands and seals the day and year first above written.

Signed, sealed and delivered in the presence of }

Received on the day of the date of this indenture from

COUNTY OF } I, of
To wit: } make oath and say:

1. That I was personally present and did see the within instrument and duplicate duly signed, sealed and executed by the part thereto;
2. That the said instrument and duplicate were executed at ;
3. That I know the said part ;
4. That I am a subscribing witness to the said instrument and duplicate.

Sworn before me at in the County of this day of in the year of our Lord 18 }

A Commissioner for taking affidavits in B.R., etc.

CHATTEL MORTGAGE.

(*Under Rev. Stat. Ont. chap. 119. sec. 4.*)

THIS INDENTURE, made (in duplicate) the day of one thousand eight hundred and eighty- Between hereinafter called "the Mortgagor," of the first part; and , hereinafter called "the Mortgagee", of the second part: Whereas,

Now, therefore, the mortgagor for the consideration hereinbefore recited, and in pursuance of the said agreement, hath granted, bargained, sold and assigned, and by these presents do grant, bargain, sell and assign unto the mortgagee, executors, administrators and assigns, all and singular, the goods, chattels, particularly mentioned and described in the schedule hereunto annexed, marked "A."

To have and to hold, all and singular, the said goods, chattels, hereinbefore granted, bargained, sold and assigned, or mentioned, or intended so to be, unto the mortgagee, executors, administrators and assigns, to the sole and proper use and behoof of the mortgagee, executors, administrators and assigns, forever.

Provided always, and these presents are upon this express condition, that if the mortgagor executors or administrators, do and shall well and truly and do and shall well and truly save harmless the mortgagee from

Then these presents, and every matter and

thing herein contained shall cease, determine, and be utterly void, to all intents and purposes, anything herein contained to the contrary thereof in anywise notwithstanding: And the mortgagor, for executors and administrators, shall and will warrant and forever defend by these presents, all and singular the said goods, chattels and property unto the mortgagee , executors, administrators and assigns, against the mortgagor, executors and administrators, and against all and every other person or persons whomsoever.

And the mortgagor doth hereby, for executors and administrators, covenant, promise and agree to and with the mortgagee , executors, administrators and assigns,

or in case the mortgagor shall attempt to sell or dispose of or in any way part with the possession of the said goods and chattels, or any of them, or to remove the same, or any part thereof out of the , or suffer or permit the same to be seized or taken in execution without the consent of the mortgagee , executors, administrators or assigns to such sale, removal or disposal thereof first had and obtained in writing, then, and in such case, it shall and may be lawful for the mortgagee, executors, administrators or assigns, with or their servant or servants, and with such other assistant or assistants, as may require at any time during the day, to enter in and upon any lands and tenements, houses and premises wheresoever and whatsoever, where the said goods and chattels, or any part thereof may be, and for such persons to break and force open any doors, locks, bars, bolts, fastenings, hinges, gates, fences, houses, buildings, enclosures and places, for the purpose of taking possession of and removing the said goods and chattels: And upon, and from and after the taking possession of such goods and chattels as aforesaid, it shall and may be lawful, and the mortgagee , executors, administrators or assigns, and each or any of them, is and are hereby authorized and empowered to sell the said goods and chattels, or any of them, or any part thereof, at public auction or private sale, as to them or any of them may seem meet: And from and out of the proceeds of such sale, in the first place, to pay and reimburse or themselves, all such sum and sums of money as may then be due by virtue of these presents, and all such expenses as may have been incurred by the mortgagee , executors, administrators or assigns in consequence of the default, neglect or failure of the mortgagor , executors, administrators or assigns, in the payment of the said sum of money, with interest thereon, as above mentioned, or in consequence of such sale or removal, as above mentioned, and in the next place to pay unto the mortgagor , executors, administrators and assigns, all such surplus as may remain after such sale, and after payment of all such sum or sums of money, and interest thereon, as may be due by virtue of these presents at the time of such seizure, and after payment of the costs, charges and expenses incurred by such seizure and sale as aforesaid.

Provided that the mortgagee , executors, administrators or assigns, may in default of payment of any of the payments of interest or instalments hereinbefore mentioned, or any part thereof, distrain for the whole principal sum then unpaid.

Provided always, nevertheless, that it shall not be incumbent on the mortgagee , executors, administrators or assigns, to sell and dispose of the said goods and chattels; but that in case of default of payment of the said sum of money, with interest thereon as aforesaid, it shall and may be lawful for the mortgagee , executors, administrators or assigns, peaceably and quietly to have, hold, use, occupy, possess and enjoy the said goods and chattels, without the let, molestation, eviction, hindrance or interruption of the mortgagor , executors, administrators or assigns, or any of them, or any other person or persons whomsoever: And the mortgagor doth hereby further covenant, promise and agree, to and with the mortgagee, executors, administrators and assigns, that in case the sum of money realized under any such sale as above mentioned shall not be sufficient to pay the whole amount due at the time of such sale, that the mortgagor, executors or administrators, shall and will forthwith pay or cause to be paid unto the mortgagee, executors, administrators and assigns, all such sum or sums of money, with interest thereon at the rate aforesaid as may then be remaining due;

And the mortgagor doth put the mortgagee in the full possession of said goods and chattels by delivering to in the name of all the said goods and chattels, at the sealing and delivery hereof.

And the mortgagor covenant with the mortgagee that he will, during the continuance of this mortgage, and any and every renewal thereof, insure the chattels and property hereinbefore mentioned against loss or damage by fire, in some insurance office (authorized to transact business in Canada) in the sum of not less than dollars, and will pay all premiums and moneys necessary for that purpose, as the same become due; and will, on demand, assign and deliver over to the said Mortgagee , executors and administrators, the policy or policies of insurance and receipts thereto appertaining: Provided, that if on default of payment of said premium or sums of money by the mortgagor , the mortgagee , executors or administrators, may pay the same, and such sums of money shall be added to the debt hereby secured (and shall bear interest at the same rate, from the day of such payment), and shall be repayable with the principal sum hereby secured.

In witness whereof, the parties to these presents have hereunto set their hands and seals.

Signed, sealed and delivered in the presence of

COUNTY OF } I,
To wit: } make oath and say:

That the foregoing mortgage truly sets forth the agreement entered into between myself and therein named, and truly states the extent of the liability intended to be created by such agreement, and covered by the foregoing mortgage.

That the foregoing mortgage is executed in good faith, and for the express purpose of securing

That the foregoing mortgage is not executed for the purpose of securing the goods and chattels mentioned in the schedule attached hereto, marked "A," against the creditors of the said , or to prevent such creditors from recovering any claim which they may have against the said

Sworn before me, at the of in the County of , this day of in the year of our Lord 188 .

A Commissioner in B. R., &c.

COUNTY OF } I, of the of in the county of ,
To wit: } and Province of Ontario, make oath and say:

1. That I was personally present and did see the within Chattel Mortgage and duplicate thereof duly signed, sealed and executed by , the parties thereto.

2. That the said Chattel Mortgage and duplicate were executed at the , in the said County of .

3. That I know the said part .

4. That I am a subscribing witness to the said Chattel Mortgage and duplicate.

Sworn before me, at the of , in the County of , this day of , in the year of our Lord 188 .

A Commissioner for taking Affidavits in B. R., &c.

DISCHARGE OF MORTGAGE.

Province of Ontario, } Dominion of Canada
TO WIT: }

TO THE REGISTRAR OF THE

Do Certify, that has satisfied that all money due on or to grow due on a certain mortgage made by to which mortgage bears date the day of A. D. 18 , and was registered in the Registry Office for the on the day of A. D. 18 at minutes past o'clock noon, in Liber for the as No.

That such mortgage has been assigned.

(Here state whether mortgage assigned or not.)

And that the person entitled

by law to receive the money, and that such mortgage is therefore discharged.
Witness hand this day of
A. D. 18

WITNESS

ONTARIO : } I,
County of }
To wit : } make oath and say

1. That I was personally present and did see the within certificate of discharge of mortgage duly signed and executed by the part thereto.

2. That the said instrument was execu- at the

3. That I know the said

4. That I am subscribing witness to the instrument.

Sworn before me }
in the county of }
this day of }
in the year of our Lord, 188 }

A Commissioner for taking affidavits in B. R., &c.

CONVEYANCES OF LANDS ON SALE BY MORTGAGE.

THIS indenture, made the ——day of —, in the year ——, between A. B., of, &c., of the one part, and C. D., of, &c., of the other part. Whereas, E. F., of, &c., did, by a certain indenture of Mortgage dated the —— day of ——, in the year ——, for the consideration of ——, bargain and sell unto the said A. B., and to his heirs and assigns forever, all that certain, &c.; together with all and singular the hereditaments and appurtenances thereunto belonging : To have and to hold the said granted and bargained premises, with the appurtenances, unto the said A. B., his heirs and assigns, to the only proper use and behoof of the said A. B., his heirs and assigns forever ; provided, nevertheless, and the said indenture of mortgage was thereby declared to be upon condition, that if the said E. F., his heirs, executors, or administrators, should well and truly pay unto the said A. B., his executors, administrators, or assigns, the just and full sum of ——, with lawful interest for the same, on or before the —— day of——, in the year ——, according to the condition of a certain bond or writing, obligatory, bearing even date with the said indenture of mortgage, that then, and in such case, the said indenture, and the said writing obligatory, should be void and of no effect: and the said E. F. did, by the said indenture, for himself, his heirs and assigns, agree with the said A. B., his heirs, executors, administrators, and assigns, that in case it should so happen, that the said sum of ——, and the interest for the same, should be due and unpaid at the time limited for the payment thereof, in the whole or in part thereof, that then it should and might be lawful for the said A. B., his heirs or assigns, at any time after default in payment, to bargain, sell, and dispose of the said mortgaged premises, with the appurtenances, at public vendue, and out of the moneys to arise from the sale thereof, to retain and keep the said sum of —— dollars, and the interest, or so much thereof as might be due, together with the costs and charges of such sale, or sales, rendering the overplus money, if any, to the said E. F., his heirs, executors, administrators, or assigns : And, whereas the said E. F. did not pay to the said A. B. the said sum of money, with the interest, at the time limited for payment, or at any time since : and the said A. B. hath, therefore, in pursuance of the authority so given to him as aforesaid, and according to the statute in such case made and provided, caused the premises to be advertised and sold at public auction ; and the same has been struck off to the said C. D., for ——, being the highest sum bid for the same.

Now, therefore, this indenture witnesseth, that the said A. B., in pursuance of the power and statute aforesaid, and also for and in consideration of the said sum of ——, to him in hand paid, by the said C. D., and at and before the ensealing and delivery hereof, the receipt whereof is hereby acknowledged, hath granted, bargained, aliened, released, and confirmed, and by these presents doth grant, bargain, sell, alien, release, and confirm unto the said C. D., and to his heirs and assigns forever, all the farm, piece, or parcel of land above mentioned, together with the hereditaments and appurtenances, as the same is described and conveyed by the said indenture of mortgage ; and all the estate, right, title, interest, claim, and demand at law and in equity, of him the said A. B., and also of the said E. F., as far forth as the said A. B. hath power

to grant and convey the same, of, in and to the premises, and every part and parcel thereof: To have and to hold the said above granted and bargained premises, with the appurtenances, unto the said C. D., his heirs and assigns, to the sole and only proper use and behoof of the said C. D., his heirs and assigns, forever.

In witness, &c., [*as in General Form of Agreement*].

DEED OF GIFT OF PERSONAL ESTATE.

Know all men by these presents, that I, A. B., of, &c., in consideration of the natural love and affection which I have and bear for my son, C. B., and also for divers other good causes and considerations, I, the said A. B., hereunto moving, have given, granted, and confirmed, and by these presents, do give, grant and confirm unto the said C. B., all and singular, my goods, chattels, leases, and personal estate whatsoever, in whose hands, custody, or possession soever they be: To have, hold, and enjoy, all and singular, the said goods, chattels, and personal estate, aforesaid, unto the said C. B., his executors, administrators, and assigns, to the only proper use and behoof of the said C. B., his executors, administrators, and assigns, forever. And I, the said A. B., all and singular, the said goods, chattels, personal estate, and other the premises, to the said C. B., his executors, administrators, and assigns, against me, the said A. B., my executors and administrators, and all and every other person and persons, whatsoever, shall and will warrant, and forever defend, by these presents; of all and singular which said goods, chattels, personal estate, and other premises, I, the said A. B., have put the said C. B. in full possession, by delivering to him one pewter dish, at the time of the sealing and delivery of these presents, in the name of the whole premises hereby granted.

In witness, &c., [*as in General Form of Agreement.*]

DEED OF GIFT BY A FATHER TO A SON OF HIS PERSONAL PROPERTY, ON CONDITIONS.

This indenture, made the, &c., between A. B., of, &c., of the one part, and C. B., of, &c., of the other part. Whereas, the said A. B, being the father of the said C. B., by reason of his age and infirmities, is not capable of attending to his estate and affairs as formerly, and has therefore agreed, for advancement of the said C. B., to make over his property to the said C. B., so that the said C. B. should pay the debts of the said A. B., and afford him a maintenance as is hereinafter mentioned: Now this indenture *Witnesseth*, That the said A. B., in order to carry the said agreement into effect, and in consideration of the natural love and affection which he hath for and towards his son, the said C. B., and of the provisoes, covenants, and agreements, hereinafter mentioned, by the said C. B., to be observed and performed, hath given, granted, bargained, sold, and assigned, and by these presents doth give, grant, bargain, sell, and assign, unto the said C. B., his executors, administrators, and assigns, all and singular, his household goods and implements of household, stock in trade, debts, rights, credits, and personal estate, whereof he is now possessed, or in any way interested in or entitled unto, of what nature or kind soever the same are, or wheresoever or in whosesoever hands they be or may be found, with their and every of their rights, members, and appurtenances: To have and to hold the said goods, household stuff, stock in trade, debts, rights, and personal estate, and the other the premises, unto the said C. B., his executors, administrators, and assigns, forever, without rendering any account or being therefor in any wise accountable to the said A. B., his heirs, executors, or administrators, for the same.

And the said C. B., for himself, his heirs, executors, and administrators, doth covenant, promise, grant, and agree, to and with the said A. B., his executors, administrators, and assigns, in manner and form following, that is to say: that he, the said C. B., his heirs, executors, and administrators, shall and will settle, pay, discharge, and satisfy, or cause to be settled, paid, discharged, and satisfied, all accounts, debts, judgments, and demands, of every nature and kind whatsoever, now outstanding, against, or now due from or payable by the said A. B., or for the payment of which the said A. B. shall be liable, or be held liable either at law or equity, on account of any matter, cause, or thing heretofore had, suffered, done, or performed, and at all times hereafter, free, discharge, and keep harmless, and

indemnified, the said A. B., his heirs, executors, administrators, from all and every such accounts, debts, judgments, and demands, and from all actions, suits, and damages, that may to him or them arise, by reason of the non-payment thereof; and moreover, that he, the said C. B., his heirs, executors, and administrators, shall and will yearly, and every year, during the term of the natural life of the said A. B., by four equal quarterly payments, the first to begin on the —— day of —— next, well and truly pay, or cause to be paid, to the said A. B., or his assigns, the sum of ——, for, or toward his support and maintenance, or find or provide for him sufficient meat, drink, washing, lodging, apparel, and attendance, suitable to his estate and situation, at the choice and election, from time to time, of the said A. B.

Provided always, and upon this condition, and it is the true intent and meaning of these presents, that if the said C. B., his heirs, executors, and administrators, shall neglect or refuse to pay the accounts, debts, judgments, and demands, according to the covenant aforesaid, or shall suffer the said A. B. to be put to any cost, charge, trouble, or expense, on account of the same, or shall neglect or refuse to pay the said annual sum, in manner aforesaid, or to find and provide for the said A. B. as aforesaid, that then, in all, any, or either of the cases aforesaid, it shall and may be lawful to and for the said A. B., all and singular, the premises hereby granted to take, repossess, and enjoy, as in his former estate.

In witness, &c. [*as in General Form of Agreement*].

A WILL OF REAL ESTATE.

The last will and testament of A. C., &c. I, A. C, considering the uncertainty of this mortal life, and being of sound mind and memory (blessed be Almighty God for the same !), do make and publish this my last will and testament, in manner and form following (that is to say): First, I give and bequeath unto my beloved wife, J. C., the sum of ——. *Item*, I give and bequeath to my eldest son G. C., the sum of ——. *Item*, I give and bequeath unto my two youngest sons, J. C. and F. C., the sum of —— each. *Item*, I give and bequeath to my daughter-in-law, S. H. widow the sum of ——; which said several legacies or sums of money I will and order to be paid to the said respective legatees, within six months after my decease. I further give and devise to my said eldest son G. C. his heirs, and assigns, all the messuage or tenement, situated, lying, and being in, &c., together with all my other freehold estate whatsoever, to hold to him the said G. C., his heirs and assigns forever. And I hereby give and bequeath to my said younger sons, J. C. and F. C., all my leashold estate, of and in all those messuages, or tenements, with the appurtenances, situate, &c., equally to be divided between them. And lastly, as to all the rest, residue, and remainder of my personal estate, goods, and chattels, of what kind and nature soever, I give and bequeath to my said beloved wife, J. C., whom I appoint sole executrix, of this my last will and testament, hereby revoking all former wills by me made.

In witness whereof, I have hereunto set my hand and seal, the —— day of ——, in the year of our Lord one thousand ——.

A. C. [L. S.]

The above instrument, consisting of one sheet (*or*, of two sheets), was now here subscribed by A. C., the testator, in the presence of each of us; and was at the same time declared by him to be his last will and testament; and we, at his request, sign our names hereto as attesting witnesses.

D. F., residing at——, in ——County.
G. H., residing at——, in ——County.

[*Or, if the witnesses do not see the testator subscribe the will, it may be attested by his acknowledgment in the following form.*]

The above instrument of one sheet (*or*, of two sheets) was, at the date thereof, declared to us by the testator, A. C., to be his last will and testament; and he then acknowledged to each of us, that he had subscribed the same; and we at his request, sign our names hereto as attesting witnesses.

D. F., residing at ——, in —— County.
G. H., residing at ——, in —— County.

CODICIL TO A WILL.

Whereas I, A. C., of, &c., have made my last will and testament in writing,

bearing date, &c. [and have thereby, &c., &c.]. Now I do by this my writing, which I hereby declare to be a codicil to my said will, to be taken as part thereof [will and direct &c., &c.], give and bequeath to my niece M. S., one gold watch, one large diamond ring, and one silver coffee-pot. And whereas, in and by my last will and testament, I have given and bequeathed to my daughter-in-law G. H., the sum of ——, I do hereby order and declare, that my will is that only the sum of —— be paid unto her, in full of the said legacy I have as aforesaid given and bequeathed unto her ; and that the remaining part of the said legacy, be given and paid to my nephew E. G. And lastly it is my desire that this my present codicil be annexed to, and made a part of my last will and testament, to all intents and purposes.

In witness whereof, I have hereunto set my hand and seal this —— day of ——, &c.

A. C. [L. S.]

The above instrument of one sheet was, at the date thereof, declared to us by the the testator, A, C., to be a codicil to be annexed to his last will and testament ; and he acknowledged, to each of us, that he had subscribed the same : and we at his request, sign our names hereto as attesting witnesses.

D. F., residing at ——, in —— County.
G. H., residing at ——, in —— County.

GENERAL FORM, DISPOSING OF BOTH REAL AND PERSONAL ESTATE.

In the name of God, Amen. I, A. B., &c., being in good bodily health, and of sound and disposing mind and memory, calling to mind the frailty and uncertainty of human life, and being desirous of settling my worldly affairs, and directing how the estate with which it has pleased God to bless me, shall be disposed of after my decease, while I have strength and capacity so to do, do make and publish this my last will and testament, hereby revoking and making null and void all other last wills and testaments by me heretofore made. And, first, I commend my immortal being to Him who gave it, and my body to the earth, to be buried with little expense or ostentation, by my executors hereinafter named.

And as to my worldly estate, and all the property, real, personal, or mixed, of which I shall die seized and possessed, or to which I shall be entitled at the time of my decease, I devise, bequeath, and dispose thereof in the manner following, to wit :

Imprimis. My will is that all my just debts and funeral charges shall, by my executors hereinafter named, be paid out of my estate, as soon after my decease as shall by them be found convenient.

Item. I give, devise, and bequeath to my beloved wife C. B., all my household furniture, and my library in my mansion or dwelling-house, my pair of horses, coach, and chaise, and their harness ; and also fifteen thousand dollars, in money to be paid to her by my executors hereinafter named, within six months after my decease ; To have and to hold the same to her, and her executors, administrators, and assigns forever. I also give to her the use, improvement, and income of my dwelling-house, land and its appurtenances, situated in ——, my warehouse, land, and its appurtenances, situated in ——, to have and to hold the same to her for and during her natural life.

Item. I give and bequeath to my honoured mother, O. B., two thousand dollars, in money, to be paid to her by my executors hereinafter named, within six months after my decease , to be for the sole use of herself, her heirs, executors, administrators, and assigns.

Item. I give, devise, and bequeath to my son, E. B., the reversion or remainder of my dwelling or mansion-house, land, and its appurtenances, situated in ——, and all profit, income, and advantage that may result therefrom, from and after the decease of my beloved wife C.B. ; To have and to hold the same to him, the said E. B , his heirs and assigns, from and after the decease of my said wife, to his and their use and behoof forever.

Item. I give devise and bequeath to my son F. B., the reversion or remainder of my warehouse, land, and its appurtenances, situated in ——, and all, the profit, income, and advantage that may result therefrom, from and after the decease of my beloved wife C. B. ; To have and to hold the same to the said F. B., his heirs and assigns, from and after the decease of

my said wife, to his and their use and behoof forever.

Item. All the rest and residue of my estate, real, personal or mixed, of which I shall die seized and possessed, or to which I shall be entitled at the time of my decease, I give, devise, and bequeath, to be equally divided to and among my said sons, E.B. and F.B. And,

Lastly. I do nominate and appoint my sons E. B. and F. B., to be the executors of this my last will and testament.

In testimony, whereof, I, the said A.B., have to this my last will and testament, contained on three sheets of paper, and to every sheet thereof subscribed my name, and to this the last sheet thereof I have here subscribed my name, and affixed my seal this, —— day of ——, in the year of our Lord one thousand eight hundred and ——.

A. B. [L. S.]

This will must be attested in the same manner as in the preceding forms.

DEVISE FROM A HUSBAND TO HIS WIFE, OF AN ESTATE FOR LIFE IN LIEU OF DOWER; REMAINDER TO HIS CHILDREN AS TENANTS IN COMMON.

Item. I give and devise unto my said wife all that my said messuage or tenement, with the appurtenances, situate &c., with the lands and hereditaments there unto belonging, and the rents, issues and profits, thereof, for and during the term of her natural life; and from and after the decease of my said wife, I give and bequeath the said messuage or tenement, lands and hereditaments, unto such child or children, as I shall leave or have living at the time of my decease, and to their heirs and assigns forever, as tenants in common, and if I shall have no such child or children, &c., then I give and devise, &c., which said legacy given to my said wife as aforesaid, I hereby declare is intended to be, and is so given to her, in full satisfaction and recompense of, and for her dower, which she may or can in any wise claim or demand out of my estate.

Item. I give and devise all the rest and residue of my estate, both real and personal (not heretofore by me given and bequeathed), unto, &c.

MORTGAGE OF LANDS BY HUSBAND AND WIFE.

THIS Indenture, made the —— day of ——, in the year of our Lord one thousand eight hundred and ——, between F. F., of the city of ——, ——, merchant, and J. his wife, of the first part, and L. M., of said city, merchant, of the second part, *witnesseth:* That the said parties of the first part, for and in consideration of the sum of ——, lawful money of Canada to them in hand paid, the receipt whereof is hereby acknowledged, have granted, bargained, aliened, released, conveyed, and confirmed, and by these presents do grant, bargain, and sell, alien, release, convey, and confirm, unto the said party of the second part, and to his assigns forever, all that certain lot &c., together with all and singular the hereditaments and appurtenances thereunto belonging, or in any wise appertaining, and the reversion, and reversions, remainder and remainders, rents, issues, and profits thereof; and also all the estate, right, title, interest, dower, possession, claim, and demand whatsoever, of the said parties of the first part, of, in, and to the same, and every part thereof, with appurtenances: To have and to hold the said hereby granted premises, with the appurtenances, unto the said party of the second part, his heirs, and assigns, to his, and their only proper use, benefit, and behoof forever. Provided always, and these presents are upon this condition, that if the said parties of the first part, their heirs, executors, administrators, or assigns, shall pay unto the said party of the second part, his executors, administrators, or assigns, the sum of ——, on or before the —— day of——, which will be in the year ——, with interest, according to the condition of a bond of the said F. F., to the said L. M., bearing even date herewith, then these presents shall become void, and the estate hereby granted shall cease and utterly determine. But if default shall be made in the payment of the said sum of money, or the interest, or of any part thereof, at the time herein-before specified for the payment thereof, the said parties of the first part, in such case, do hereby authorize and fully empower the said party of the second part, his executors, administrators, and assigns, to sell the said hereby granted premises,

at public auction and convey the same to the purchaser, in fee simple, agreeably to the act in such cases made and provided, out of the moneys arising from such sale, to retain the principal and interest which shall then be due on the said bond, together with all costs and charges, and pay the overplus (if any) to the said F. F., party of the first part, his heirs, executors, administrators, or assigns.

The mortgagor covenants that he has a good title to the lands in question, and that he has done no act to encumber the same.

The mortgagor covenants that he will insure the mortgaged premises for not less than the sum of ——.

The mortgagee on default shall have quiet possession of the mortgaged premises.

In witness whereof, the parties to these presents have hereunto set their hands and seals, the day and year first above written.

Sealed and delivered in the presence of } FRANCIS FOREST [L. S.]
} JULIA FOREST. [L. S.]

JOHN SMITH.

A MORTGAGE GIVEN FOR PART OF THE PURCHASE MONEY FOR LAND.

THIS Indenture, made the —— day of ——, in the year of our Lord ——, between A. B., of the city of ——, merchant, of the first part, and R. T., of the said city, esquire, of the second part, *witnesseth:* That the said party of the first part, forand in consideration of the sum of three thousand dollars, lawful money of Canada, to him in hand paid, the receipt whereof is hereby acknowledged, hath granted, bargained, sold, aliened, released, conveyed, and confirmed, and by these presents doth grant, bargain, sell, alien, release, convey and confirm, unto the said party of the second part, and to his heirs and assigns forever, all those three certain lots, pieces and parcels of land, situate, lying, and being, &c.; the said three lots of land being part of the premises this day conveyed to the said A. B. by the said R. T. and his wife, and these presents are given to secure the payment of part of the consideration money of the said premises; together with all and singular the hereditaments and appurtenances thereto belonging, or in any wise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, and also, all the estate, right, title, interest, dower, possession, claim, and demand whatsoever, of the said party of the first part, of, in, and to the same, and every part thereof, with the appurtenances. To have and to hold the said hereby granted premises, with the appurtenances, unto the said party of the second part, his heirs, and assigns, to his and their only proper use, benefit, and behoof forever. Provided always and these presents are upon this condition, that if the said party of the first part, his heirs, executors, administrators, and assigns, shall pay unto the said party of the second part, his executors, administrators, or assigns, the sum of three thousand dollars, lawful money aforesaid, on or before the —— day of —— next, with interest thereon at the rate of six per cent. per annum, payable half yearly, on the first days of May and November in each year, until the whole principal sum shall be fully paid and satisfied, according to the condition of the bond of the said A. B., to the said R. T., bearing even date herewith, then these presents, and the estate hereby granted shall cease and be void. And if default shall be made in the payment of the said sum of money, or the interest, or of any part thereof, at the time hereinbefore specified for the payment thereof, the said party of the first part in each case doth hereby authorize and fully empower the said party of the second part, his executors, administrators, and assigns, to sell the said hereby granted premises at public auction, and convey the same to the purchaser, in fee simple, according to law, and out of the moneys arising from such sale to retain the principal and interest which shall then be due on the said bond, together with all the costs and charges, and the overplus (if any) pay to the said party of the first part, his heirs, executors, administrators, and assigns. And it is also agreed, by and between the parties to these presents, that until the payment of the said principal and interest moneys in full, it shall be lawful for the party of the second part, his executors, administrators, or assigns, to keep the buildings erected, or to be erected, upon the lands above con-

veyed, insured against loss or damage by fire, and these presents shall operate to secure the repayment of the premium or premiums paid for effecting or continuing such insurance.

Same covenants as to title and insurance as in preceding form.

In witness, &c., [*As in mortgage of lands by Husband and Wife.*]

MORTGAGE ON GOODS OR CHATTELS.

To all to whom these presents shall come: Know ye that I, A. B., of ——, party of the first part, for securing the payment of the money hereinafter mentioned, and in consideration of the sum of one dollar to me duly paid by C. D. of ——, of the second part, at or before the ensealing and delivery of these presents, the receipt whereof is hereby acknowledged, having bargained and sold, and by these presents do grant, bargain and sell unto the said party of the second part, two bay horses, and all other goods and chattels mentioned in the schedule hereunto annexed, and now in the possession of ——; to have and to hold all and singular the goods and chattels above bargained and sold, or intended so to be, unto the said party of the second part, his executors, administrators and assigns, forever. And I, the said party of the first part, for myself, my heirs, executors and administrators, all and singular, the said goods and chattels above bargained and sold unto the said party of the second part, his heirs, executors, administrators and assigns, against me, the said party of the first part, and against all and every person or persons whomsoever, shall and will warrant and for ever defend; upon condition, that if I, the said party of the first part, shall and do well and truly pay unto the said party of the second part, his executors, administrators, or assigns, the full sum of —— dollars, on the —— day of —— next, according to the tenor and effect of a certain promissory note bearing even date herewith, made by me in favour of the said C. D., then these presents shall be void. And I, the said party of the first part, for myself, my executors, administrators and assigns, do covenant and agree to and with the said party of the second part, his executors, administrators and assigns, that in case default shall be made in the payment of the said sum above mentioned, then it shall and may be lawful for, and I, the said party of the first part, do hereby authorize and empower the said party of the second part, his executors, administrators and assigns, with the aid and assistance of any person or persons, to enter my dwelling house, store, and other premises, and such other place or places as the said goods or chattels are or may be placed, and take and carry away the said goods and chattels, and to sell and dispose of the same for the best price they can obtain; and out of the money arising therefrom, to retain and pay the said sum above mentioned, and all charges touching the same, rendering the overplus (if any) unto me, or to my executors, administrators or assigns. And until default be made in the payment of the said sum of money I am to remain and continue in the quiet and peaceable possession of the said goods and chattels and the full and free enjoyment of the same.

In witness whereof, &c. [*as in Mortgage of Lands by Husband and Wife*].

POWER OF ATTORNEY TO COLLECT DEBTS.

Know all men by these presents, that I A. B., of ——, have constituted, made, and appointed, and by these presents do constitute, make, and appoint T. U., of ——, to be my true and lawful attorney, for me and in my name and stead, and to my use, to ask, demand, sue for, levy, recover, and receive, all such sum and sums of money, debts, rents, goods, wares, dues, accounts, and other demands whatsoever, which are or shall be due, owing, payable, and belonging to me or detained from me, in any manner of ways or means whatsoever, by I. K., his heirs, executors and administrators, or any of them, giving and granting unto my said attorney, by these presents, my full and whole power, strength and authority in and about the premises, to have, sue, and take all lawful ways and and means, in my name, for the recovery thereof; and upon the receipt of any such debts, dues, or sums of money aforesaid, acquittances or other sufficient discharges, for me and in my name to make, seal and deliver; and generally all and every other act and acts, thing and things, device and devices, in the law whatsoever, needful and necessary to be done in and about the

premises, for me and in my name to do, execute and perform, as largely and amply, to all intents and purposes, as I might or could do if personally present, or as the matter required more special authority than is herein given; and attorneys, one or more under him, for the purpose aforesaid, to make and constitute, and again at pleasure to revoke, ratifying, allowing and holding, for firm and effectual, all and whatsoever my said attorney shall lawfully do in and about the premises, by virtue hereof.

In witness, &c. [*as in Power of Attorney to Sell and Lease Lands*].

POWER TO RECEIVE A LEGACY.

KNOW all men by these presents, that whereas A. B., late of ——, deceased, by his last will and testament did give and bequeath unto me, C. D., of ——, a legacy of —— to be paid unto me on ——, of which said will E. F., of ——, and C. H., of ——, are joint executors as in and by the said will may appear: now know ye, that I the said C. D. have made, ordained, constituted, and appointed J. K., of ——, my true and lawful attorney, for me and in my name, and for my use and benefit, to ask, demand, and receive, of and from the said E. F. and G. H., the legacy given and bequeathed unto me, the said C. D., by the said will of the said A. B., as aforesaid; and upon receipt thereof by, or payment thereof to my said attorney, a general release or discharge for the same to make, execute, and deliver; hereby ratifying, confirming, and allowing whatsoever my said attorney shall lawfully do in the premises.

In witness, &c.

STOCK POWER.

KNOW all men by these presents, that I, A. B., of ——, do hereby make, constitute, and appoint C. D., of ——, my true and lawful attorney, for me and in my name to sell, transfer and assign —— shares of capital stock, standing in my name on the books of the Merchants' Bank in the city of ——, with power also an attorney or attorneys under him for that purpose to make and substitute, with like power, and to do all lawful acts requisite for effecting the premises; hereby ratifying and confirming all that my said attorney or his substitute or substitutes shall do therein by virtue of these presents.

In witness, &c.

TRANSFER OF STOCK.

KNOW all men by these present, that I, C. D., of ——, for value received, have bargained, sold, assigned and transferred, and by these presents do bargain, sell, assign, and transfer unto E. F., —— shares of capital stock, standing in my name on the books of the Merchants' Bank, in the city of ——, and do hereby constitute and appoint A. B., of ——, my true and lawful attorney, irrevocable for me and in my name and stead, but to his use, to sell, assign, transfer, and set over all or any part of the said stock, and for that purpose to make and execute all necessary acts of assignment and transfer, and one or more persons to substitute with like full power; hereby ratifying and confirming all that my said attorney, or his substitute or substitutes, shall lawfully do by virtue hereof.

In witness, &c.

POWER TO RECEIVE DIVIDEND.

KNOW all men by these presents, that I, A. B., of the ——, do authorize, constitute and appoint C. D. to receive from the cashier of the ———— Bank of ——, the dividend now due to me on all stock standing to my name on the books of the said company, and receipt for the same; hereby ratifying and confirming all that may lawfully be done in the premises by virtue hereof.

In witness, &c.

GENERAL RELEASE OF ALL DEMANDS.

KNOW all men by these presents, that I, A. B., of, &c., for and in consideration of the sum of ——, to me paid by C. D., of, &c. (the receipt whereof I do hereby acknowledge), have remised, released, and

forever discharged, and I do hereby, for myself, my heirs, executors, administrators and assigns, remise, release, and forever discharge the said C.D., his heirs, executors and administrators, of and from all debts, demands, actions, and causes of action which I now have, in law or equity, or which may result from the existing state of things, from any and all contracts, liabilities, doings, and omissions, from the beginning of the world to this day.

In testimony whereof, I have hereunto set my hand and seal, this sixteenth day of May, eighteen hundred and eighty-two.

JOHN SMITH. [L.S.]

AGREEMENT FOR A LEASE.

THIS agreement, made the —— day of ——, in the year eighteen hundred and eighty-two, between A.B. of ——, and C.D., of said city, merchant, *witnesseth*, That A.B. agrees, by indenture, to be executed on or before the —— day ot —— next, to demise and let to the said C.D. a certain house and lot in said city, now or late in the occupation of E. F., known as No. —, in —— street, to hold to the said C. D., his executors, administrators and assigns, from the —— day of —— aforesaid, for and during the term of —— years, at or under the clear yearly rent of —— dollars, payable quarterly, clear of all taxes and deductions except the ground rent. In which lease there shall be contained covenants on the part of the said C.D., his executors, administrators and assigns, to pay the rent (except in case the premises are destroyed by fire, the rent is to cease until they are rebuilt by the said A.B.), and to pay all taxes and assessments (except the ground rent): to repair the premises (except damages by fire); not to carry on any offensive business on the same (except by written permission of the said A.B.); to deliver the same up at the end of the term in good repair (except damages by fire, aforesaid); with all other usual and reasonable covenants, and a proviso for the re-entry of the said C.D., his heirs and assigns, in case of the non-payment of the rent for the space of fifteen days after either of the said rent-days, or the non-performance of any of the covenants. And there shall also be contained covenants on the part of the said A.B., his heirs and assigns, for quiet enjoyment: to renew said lease at the expiration of said term, for a further period of —— years at the same rent, on the said C.D., his executors, administrators or assigns, paying the said A.B., his executors, administrators or assigns, the sum of—— dollars, as a premium for such renewal; and that in case of accidental fire at any time during the term, the said A.B. will forthwith proceed to put the premises in as good repair as before such fire, the rent in the meantime to cease. And the said C.D. hereby agrees to accept such lease on the terms aforesaid. And it is mutually agreed, that the cost of this agreement, and of making and recording said lease, and a counterpart thereof, shall be borne by the said parties equally.

As witness our hands and seals, the day and year first above written.

In presence of } A.B. [L.S.]
J.S. } C.D. [L.S.]

LANDLORD'S AGREEMENT OF LEASE.

This is to certify, that I have, this —— day of ——, 18—, let and rented unto Mr. C.D. my house and lot, known as No. —, in —— street, in the city of ——, with the appurtenances, and the sole and uninterrupted use and occupation thereof, for one year, to commence the —— day of —— next, at the yearly rent of —— dollars, payable quarterly, on the usual quarter-days; rent to cease in case the premises are destroyed by fire.

A.B.

TENANT'S AGREEMENT.

THIS is to certify, that I have hired and taken from Mr. A.B. his house and lot, known as No. —, in —— street, in the city of ——, with the appurtenances, for the term of one year, to commence the first day of —— next, at the yearly rent of ——— dollars, payable quarterly on the usual quarter-days. And I do hereby promise to make punctual payment of the rent in manner aforesaid, except in case the premises become untenantable from fire or any other cause, when the rent is to cease; and do further promise to quit and surrender the premises, at the expiration of the term, in

as good state and condition as reasonable use and wear thereof will permit, damages by the elements excepted.

Given under my hand and seal the —— day of ——, 18—.

In presence of } C.D. [L.S.]
J.S. }

SECURITY FOR RENT.

In consideration of the letting of the premises above described, and for the sum of one dollar, I do hereby become surety for the punctual payment of the rent, and performance of the covenants in the above written agreement mentioned, to be paid and performed by C. D., as therein specified and expected; and if any default shall be made therein I do hereby promise and agree to pay unto Mr. A. B. such sum or sums of money as will be sufficient to make up such deficiency, and fully satisfy the conditions of the said agreement, without requiring any notice of non-payment or proof of demand being made.

Given, &c. [*as in Tenant's agreement.*]

TENANT'S AGREEMENT FOR A HOUSE, EMBRACING A MORTGAGE OF HIS CHATTELS.

This is to certify, that I, A. B., have hired and taken from C. D., the premises known as No. —, in ——— street in the city of——— for the term of one year from the first day of May next, at the yearly rent of six hundred dollars, payable quarterly. And I hereby promise to make punctual payment of the rent in manner aforesaid, and quit and surrender the premises at the expiration of said term in as good state and condition as reasonable use and wear thereof will permit, damage by the elements excepted; and engage not to let or underlet the whole or any part of the said premises, or occupy the same for any business deemed extra-hazardous on account of fire, without the consent of the landlord, under the penalty of forfeiture and damages. And I do hereby mortgage and pledge all the personal property, of what kind soever, which I shall at any time have on said premises, and whether exempt by law from distress for rent or sale under execution, or not, to the faithful performance of these covenants, hereby authorizing the said C. D., or his assigns, to distrain upon and sell the same, in case of any failure on my part to perform the said covenants, or any or either of them.

Given, &c.

LANDLORD'S AGREEMENT.

This is to certify, that I, C. D., have let and rented unto A. B. the premises known as No. —, in ——— street, in the city of ———, for the term of one year from the first of May next, at the yearly rent of six hundred dollars, payable quarterly. The premises are not to be used or occupied for any business deemed extra-hazardous on account of fire, nor shall the same, or any part thereof, be let or underlet, except with the consent of the landlord in writing, under the penalty of forfeiture and damages.

Given, &c.

AGREEMENT FOR PART OF A HOUSE.

Memorandum of an agreement entered into, the ——— day of ———, 188 , by and between A. and B., of ——, and C. D., of, &c., whereby the said A.B. agrees to let and the said C. D. agrees to take, the rooms, or apartments following, that is to say: an entire first floor and one room in the attic story or garret, and a back kitchen and cellar opposite, with the use of the yard for drying linen, or beating carpets or clothes, being part of a house and premises in which the said A. B. now resides, situate and being in No. —, in —— street in the city of ———, to have and to hold the said rooms and apartments, and the use of the same yard as aforesaid, for and during the term of half a year, to commence from the ——— day of ——— instant, at and for the yearly rent of—— dollars, lawful money of Canada, payable monthly, by even and equal portions, the first payment to be made on the —— day of —— next ensuing the date hereof; and it is further agreed that, at the expiration of the said term of half a year, the said C. D. may hold, occupy, and enjoy the said rooms or apartments, and have the use of the said yard as aforesaid, from month to month, for so long a time as the said C. D. and A. B. may and shall agree, at the rent above specified;

and that each party be at liberty to quit possession on giving the other a month's notice in writing. And it is also further agreed, that when the said C. D. shall quit the premises, he shall leave them in as good condition and repair as they shall be in on his taking possession thereof, reasonable wear excepted.

Witness, &c.

NOTICE TO QUIT, BY LANDLORD.

Please to take notice that you are hereby required to surrender and deliver up possession of the house and lot known as No. — in—— street, in the city of—— which you now hold of me; and to remove therefrom on the first day of—— next, pursuant to the provisions of the statute relating to the rights and duties of landlord and tenant.

Dated this—— day of ——, 188 .

To Mr. C. D. A. B., Landlord.

NOTICE TO QUIT, BY TENANT

Please to take notice, that on the first day of May next I shall quit possession and remove from the premises I now occupy, known as house and lot No. —, in —— street, in the city of ——.

Dated this ——day of ——, 18 .

To Mr. A. B. Yours, &c., C. D.

THE LIKE WHERE COMMENCEMENT OF THE TENANCY IS UNCERTAIN.

Mr. C. D.—I hereby give you notice to quit; and deliver up on the —— day of —— next the possession of the messuage or dwelling house [*or*, rooms and apartments, *or*, farm lands and premises], with the appurtenances, which you now hold of me, situate in the—— of ——, in the county of ———. provided your tenancy originally commenced at that time of the year; or otherwise that you quit and deliver up the possession of the said messuage, &c., at the end of the year of your tenancy which shall expire next after the end of one half-year from the time of your being served with this notice.

Dated, &c. [*as in Notice to Quit by Landlord*].

NOTICE TO THE TENANT EITHER TO QUIT THE PREMISES, OR TO PAY DOUBLE VALUE.

Sir: I hereby give you notice to quit, and yield up, on the —— day of ——next, possession of the messuage, lands, tenements and hereditaments, which you now hold of me, situate at —— in the parish of ——, and county of ——- in failure whereof I shall require and insist upon double the value of the said premises according to the statute in such case made and provided.

Dated, &c. [*as in Notice to Quit, by Landlord.*]

NOTE WITH SURETY.

$100. Toronto, April 12, 188 .

Six months after date, I promise to pay ———. or order, one hundred dollars, value received.

(Sgd.)

AN UNNEGOTIABLE NOTE.

$1000. Toronto, April 10, 188 .

Three months after date, I promise to pay ——— one thousand dollars, for value received.

(Sgd.)

A NEGOTIABLE NOTE.

$1000. Toronto, April 19, 188 .

Three months after date, I promise to pay ———, or order, one thousand dollars, for value received.

(Sgd.)

A NOTE OR DUE BILL, PAYABLE ON DEMAND.

$100. Toronto,, April 14, 188 .

On demand I promise to pay———, or order, one hundred dollars, with interest, for value received.

(Sgd.)

A NOTE BEARING INTEREST.

$100. Toronto, May 1, 188 .

Six months after date, I promise to pay ———, or order, one hundred dollars with interest, for value received.

(Sgd.)

A NOTE PAYABLE BY INSTALMENTS.

$3,000. TORONTO, April 20, 188 .

FOR value received, I promise to pay ———, or order, three thousand dollars, in the manner following, viz., one thousand dollars in one year, one thousand dollars in two years, and one thousand dollars in three years, with interest on all said sums. payable semi-annually, without defalcation or discount.

(Sgd.)

SEALED NOTE.

$5,000. TORONTO, May 8, 188 .

FOR value received, I promise to pay ———, or order, five thousand dollars, in three years from the date hereof, with interest, payable semi-annually, without defalcation or discount. And in case of default of my payment of the interest or principal aforesaid with punctuality, I hereby empower any attorney-at-law, to be appointed by said Smith & Edgar, or their assigns, to appear in any court which said Smith & Edgar, or their assigns, may select, and commence and prosecute a suit against me on said note, to confess judgment for all and every part of the interest or principal on said note, in the payment of which I may be delinquent.

Witness my hand and seal, this 8th day of June, A. D. 188 .

Attest,———.

(Sgd.)

DUE BILL PAYABLE IN GOODS.

DUE ———, or bearer, fifty dollars in merchandise, for value received, payable on demand.

(Sgd.)

TORONTO, May 3, 1882.

ORDER FOR GOODS.

TORONTO, April, 16, 188 .

PLEASE pay Mr. Jones, or order, one hundred dollars in merchandise, and charge the same to account of

(Sgd.)

To ——.

BILL OF EXCHANGE.

$1,000 TORONTO, April 20, 188 .

THIRTY days after sight, pay to the order of ——— one thousand dollars, and charge the same to account of

(Sgd.)

To ———.

A SET OF BILLS OF EXCHANGE.

No. 188.—Ex. £300.

TORONTO, April 26, 188 .

THREE days after sight of this, my first of exchange (second and third unpaid), pay to ———, or order, three hundred pounds sterling, value received, and charge the same to account of

(Sgd.)

No. 188.—Ex. £300.

TORONTO, April 26, 188 .

THREE days after sight of this, my second of exchange (first and third unpaid), pay to ——, or order, three hundred pounds sterling value received, and charge the same to account of

(Sgd.)

No. 188.—Ex. £300.

TORONTO, April 8, 188

THREE days after sight on this my third of exchange (first and second unpaid) pay to ———, or order, three hundred pounds sterling, value received, and charge the same to account of

Sgd.)

MONEY ORDER.

MR———:

TORONTO, May 20, 188 .

PLEASE pay—— —, or order, one hundred dollars, and charge the same to account of

(Sgd.)

NOTICE OF NON-PAYMENT.

TO BE GIVEN TO THE DRAWER AND ENDORSERS.

TORONTO, Feb. 28, 188 .

PLEASE to take notice, that a certain bill of exchange. dated——, for $1000, drawn by ——, on and accepted by —— and by you endorsed, was this day protested for

non-payment, and the holders look to you for the payment thereof.

Yours, &c.,
J. T., Notary Public.

To Mr. A B.

RECEIPT IN FULL OF ALL DEMANDS.

$500 TORONTO, March 28, 188 .

RECEIVED of ——— five hundred dollars, in full of all demands against him.

(Sgd.)

RECEIPT ON ACCOUNT.

$100 TORONTO, March 28, 188 .

RECEIVED of ——— one hundred dollars to apply on account.

(Sgd.)

RECEIPT FOR MONEY PAID FOR ANOTHER.

$100. TORONTO, March 28th, 188 .

RECEIVED of ——— one hundred dollars in full of all demands against ———.

(Sgd.)

GENERAL FORM OF ASSIGNMENT.

TO BE WRITTEN OR ENDORSED ON THE BACK OF ANY INSTRUMENT.

KNOW all men by these presents, that I the within named A. B., in consideration of one hundred dollars to me paid by C. D. have assigned to the said C. D., and his assigns, all my interest in the within written instrument, and every clause, article, or thing therein contained ; and I do hereby constitute the said C. D., my attorney, in my name, but to his own use, and at his own risk and cost, to take all legal measures which may be proper for the complete recovery and enjoyment of the assigned premises, with power of substitution.

In testimony whereof, I have hereunto set my hand and seal, this tenth day of May, one thousand eight hundred and sixty.

Executed and delivered in the presence of } A. B. SEAL]

ASSIGNMENT OF A LEASE.

KNOW all men by these presents, that I, the within named A. B., the lessee, for and in consideration of the sum of one thousand dollars, to me in hand paid by C. D., of &c., at and before the sealing and delivery hereof (the receipt whereof I do hereby acknowledge), have granted, assigned, and set over, and by these presents do grant, assign, and set over, unto the said C. D., his executors, administrators, and assigns the within indenture of lease, and all that messuage, &c., thereby demised, with the appurtenances ; and also all my estate, right, title, term of years yet to come, claim and demand whatsoever, of, in, to, or out of the same. To have and to hold the said messuage, &c., unto the said C. D., his executors, administrators, and assigns, for the residue of the term within mentioned, under the yearly rent and covenants within reserved and contained, on my part and behalf to be done, kept and performed.

In testimony, &c. [*as in General Form of Assignment*].

ASSIGNMENT OF A MORTGAGE.

KNOW all men by these presents, that I A. B., the mortgagee within named, for and in consideration of the sum of sixteen hundred dollars, to me paid by C. D., of, &c., at and before the sealing and delivery hereof (the receipt whereof is hereby acknowledged), have granted, bargained, sold, assigned, and set over, and by these presents do grant, bargain, sell, assign and set over, unto the said C. D., his heirs, executors, administrators, and assigns, the within deed of mortgage, and all my right and title to that messuage, &c., therein mentioned and described, together with the original debt for which the said mortgage was given, and all evidence thereof, and all the rights and appurtenances thereunto belonging. To have and to hold all and singular the premises hereby granted and assigned, or mentioned, or intended so to be, unto the said C. D., his heirs and assigns, forever ; subject, nevertheless to the right and equity of redemption of the within named E. F., his heirs and assigns (if any they have), in the same.

In testimony, &c. [*as in General Form of Assignment.*]

ASSIGNMENT OF A PATENT.

WHEREAS, letters patent bearing date ——— day of ——— in the year ———, were granted and issued by the government of Canada, under the seal thereof, to A. B., of the town of ——, in the county of ———, in the Province of ———, for [here state the nature of the invention, in general terms, as in the patent], a more particular and full description whereof is annexed to the said letters patent in a schedule ; by which letters patent the full and exclusive right and liberty of making and using the said invention, and of vending the same to others to be used, was granted to the said A. B., his heirs, executors, and administrators, or assigns, for the term of fourteen years from the said date :

Now know all men by these presents, that I, the said A. B., for and in consideration of the sum of ——— dollars, to me in hand paid (the receipt whereof is hereby acknowledged), have granted, assigned, and set over, and by these presents do grant, assign, and set over, unto C. D., of the town of ——, in the county of ——, and the Province of ——— his executors, administrators, and assigns, forever, the said letters patent, and all my right, title and interest, in and to the said invention, so granted unto me : To have and to hold the said letters patent and invention, with all benefit, profit, and advantage thereof, unto the said C. D., his executors, administrators, and assigns, in as full, ample, and beneficial a manner, to all intents and purposes, as I, the said A. B., by virtue of the said letters patent, may or might have or hold the same, if this assignment had not been made, for and during all the rest and residue of the said term of fourteen years.

In testimony, &c. [*as in General Form of Assignment*].

ASSIGNMENT OF A POLICY OF INSURANCE.

KNOW all men by these presents, that I, the within-named A. B., for and in consideration of the sum of ———, to me paid by C. D., of, &c., (the receipt whereof is hereby acknowledged), have granted, sold, assigned, transferred, and set over, and by these presents I do absolutely grant, sell, assign, transfer, and set over to him, the said C. D., all my right, property, interest, claim, and demand in and to the within policy of insurance, which have already arisen, or which may hereafter arise thereon, with full power to use my name so far as may be necessary to enable him fully to avail himself of the interest herein assigned, or hereby intended to be assigned. The conveyance herein made, and the powers hereby given, are for myself and my legal representatives to said C. D., and his legal representatives.

In testimony, &c. [*as in General Form of Assignment*].

ASSIGNMENT OF DEMAND FOR WAGES OR DEBT

IN consideration of $100 to me in hand paid by M. D., of the city of ———, the receipt whereof is hereby acknowledged, I, L. C., of the same place, have sold, and by these presents do sell, assign, transfer, and set over, unto the said M. D., a certain debt due from N. E., amounting to the sum of $150, for work, labour, and services, by me performed for the said N. E. (or for goods sold and delivered to the said N. E.), with full power to sue for, collect, and discharge, or sell and assign the same in my name or otherwise, but at his own cost and charges ; and I do hereby covenant that the said sum of $150 is justly due as aforesaid, and that I have not done and will not do any act to hinder or prevent the collection of the same by the said M. D.

Witness my hand, this
April 10th, 18 .

L. C.

ASSIGNMENT OF ACCOUNT ENDORSED THEREON.

IN consideration of $1, value received, I hereby sell and assign to M. D., the within account which is justly due from the within named N. E., and I hereby authorize the said M. D., to collect the same.

L. C.

Toronto, April 10th, 18 .

BOND TO A CORPORATION.

Know all men by these presents, that I A. B., of, &c., am held and firmly bound unto the ——— Insurance Company, in the sum of one thousand dollars, lawful money of Canada, to be paid to the said ——— Insurance Company or assigns; for which payment, well and truly to be made, I bind myself, my heirs, executors, and administrators, firmly by these presents.

Sealed with my seal. Dated the ——— day of ———, one thousand eight hundred and ———.

The condition of the above obligation is such, that if the above bounden A. B., his heirs, executors, or administrators, shall well and truly pay, or cause to be paid unto the above named ——— Insurance Company or assigns, the just and full sum, &c. [*as in Common Bond*].

MISCELLANEOUS TABLES.

Miscellaneous Tables.

TABLE SHOWING HOW MANY DAYS A NOTE HAS TO RUN.

The following table will be found very useful to book-keepers in calculating the number of days a note has to run:—

From / To ☞	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November.	December
January	365	31	59	90	120	151	181	212	243	273	304	334
February	334	365	28	59	89	120	150	181	212	242	273	303
March	306	337	365	31	61	92	122	153	184	214	245	275
April	275	306	334	365	30	61	91	122	153	183	214	244
May	245	276	304	335	365	31	61	92	123	153	184	214
June	214	245	273	304	334	365	30	61	92	122	153	183
July	184	215	243	274	304	335	365	31	62	92	123	153
August	153	184	212	243	273	304	334	365	31	61	92	122
September	122	153	181	212	242	272	303	334	365	30	61	91
October	92	123	151	182	212	243	273	304	335	365	31	61
November	61	92	120	151	181	212	242	273	304	334	365	30
December	31	62	90	121	151	182	212	243	274	304	335	365

The above table gives the number of days intervening between any day, in any month to a similar date in any other month. To ascertain these intervening days, run the eye along the line designated by title of the month on the left hand, until it reaches its intersection by the column headed at the top, by the month in which the note matures, and the figures at the angle denote the number of days from the first of the respective months. To this, add the day upon which the note matures, and from the sum subtract the date of the month from which it is reckoned.

EXAMPLE.—A note falling due June 26th, is offered for discount on March 10th; wanted, the number of days intervening before maturity.

The figures at the angle give	92
Add date of note's maturity	26
	118
Deduct date of discount	10
Days to run	108

A CALENDAR

For ascertaining Any Day of the Week for any given time within Two Hundred Years from the introduction of the New Style, 1752*, to 1952, inclusive.

YEARS 1753 TO 1952.										31 Jan.	28 Feb.	31 Mar.	30 Apr.	31 May.	30 June.	31 July.	31 Aug.	30 Sept.	31 Oct.	30 Nov.	31 Dec.
1701	1767	1778	1789	1795																	
1801	1807	1818	1829	1835	1846	1857	1863	1874	1885	1891	4	7	7	3	5	1	3	6	2	4	7	2
						1903	1914	1925	1931	1942											
1702	1773	1779	1790																		
1802	1813	1819	1830	1841	1847	1858	1869	1875	1886	1897	5	1	1	4	6	2	4	7	3	5	1	3
						1909	1915	1926	1937	1943											
1757	1763	1774	1785	1791																	
1803	1814	1825	1831	1842	1853	1859	1870	1881	1887	1898	6	2	2	5	7	3	5	1	4	6	2	4
						1910	1921	1927	1938	1949											
1754	1765	1771	1782	1793	1799																
1805	1811	1822	1833	1839	1850	1861	1867	1878	1889	1895	2	5	5	1	3	6	1	4	7	2	5	7
					1901	1907	1918	1929	1933	1946											
1755	1766	1777	1783	1794	1800																
1806	1817	1823	1834	1845	1851	1862	1873	1879	1890	....	3	6	6	2	4	7	2	5	1	3	6	1
					1902	1913	1919	1930	1941	1947											
1758	1769	1775	1786	1797																	
1809	1815	1826	1837	1843	1854	1865	1871	1882	1893	1899	7	3	3	6	1	4	6	2	5	7	3	5
					1905	1911	1922	1933	1939	1950											
1753	1759	1770	1781	1787	1798																
1810	1821	1827	1838	1849	1855	1806	1877	1883	1894	1900	1	4	4	7	2	5	7	3	6	1	4	6
						1906	1917	1923	1934	1945											
										1951											
LEAP YEARS.										..	29	..	..	..	..	..	..	..	..	..	..
1704	1792	1804	1832	1860	1888	1928	....			7	3	4	7	2	5	7	3	6	1	4	6
1768	1796	1808	1836	1864	1892	1904	1932			5	1	2	5	7	3	5	1	4	6	2	4
1772	....	1812	1840	1868	1896	1908	1936			3	6	7	3	5	1	3	6	2	4	7	2
1776	....	1816	1844	1872	....	1912	1940			1	4	5	1	3	6	1	4	7	2	5	7
1780	....	1820	1848	1876	....	1916	1944			6	2	3	6	1	4	6	2	5	7	3	5
1756	1784	1824	1852	1880	....	1920	1948			4	7	1	4	6	2	4	7	3	5	1	8
1760	1788	1828	1856	1884	....	1924	1952			2	5	6	2	4	7	2	5	1	3	6	1

1	2*	3	4	5	6	7
Monday 1	Tuesday 1	Wednesd. 1	Thursday 1	Friday 1	Saturday 1	*Sunday* 1
Tuesday 2	Wednesd. 2	Thursday 2	Friday 2	Saturday 2	*Sunday* 2	Monday 2
Wednesd. 3	Thursday 3	Friday 3	Saturday 3	*Sunday* 3	Monday 3	Tuesday 3
Thursday 4	Friday* 4	Saturday 4	*Sunday* 4	Monday 4	Tuesday 4	Wednesd. 4
Friday 5	Saturday 5	*Sunday* 5	Monday 5	Tuesday 5	Wednesd. 5	Thursday 5
Saturday 6	*Sunday* 6	Monday 6	Tuesday 6	Wednesd. 6	Thursday 6	Friday 6
Sunday 7	Monday 7	Tuesday 7	Wednesd 7	Thursday 7	Friday 7	Saturday 7
Monday 8	Tuesday 8	Wednesd. 8	Thursday 8	Friday 8	Saturday 8	*Sunday* 8
Tuesday 9	Wednesd. 9	Thursday 9	Friday 9	Saturday 9	*Sunday* 9	Monday 9
Wednesd. 10	Thursday 10	Friday 10	Saturday 10	*Sunday* 10	Monday 10	Tuesday 10
Thursday 11	Friday 11	Saturday 11	*Sunday* 11	Monday 11	Tuesday 11	Wednesd. 11
Friday 12	Saturday 12	*Sunday* 12	Monday 12	Tuesday 12	Wednesd. 12	Thursday 12
Saturday 13	*Sunday* 13	Monday 13	Tuesday 13	Wednesd. 13	Thursday 13	Friday 13
Sunday 14	Monday 14	Tuesday 14	Wednesd. 14	Thursday 14	Friday 14	Saturday 14
Monday 15	Tuesday 15	Wednesd. 15	Thursday 15	Friday 15	Saturday 15	*Sunday* 15
Tuesday 16	Wednesd. 16	Thursday 16	Friday 16	Saturday 16	*Sunday* 16	Monday 16
Wednesd. 17	Thursday 17	Friday 17	Saturday 17	*Sunday* 17	Monday 17	Tuesday 17
Thursday 18	Friday 18	Saturday 18	*Sunday* 18	Monday 18	Tuesday 18	Wednesd. 18
Friday 19	Saturday 19	*Sunday* 19	Monday 19	Tuesday 19	Wednesd. 19	Thursday 19
Saturday 20	*Sunday* 20	Monday 20	Tuesday 20	Wednesd. 20	Thursday 20	Friday 20
Sunday 21	Monday 21	Tuesday 21	Wednesd. 21	Thursday 21	Friday 21	Saturday 21
Monday 22	Tuesday 22	Wednesd. 22	Thursday 22	Friday 22	Saturday 22	*Sunday* 22
Tuesday 23	Wednesd 23	Thursday 23	Friday 23	Saturday 23	*Sunday* 23	Monday 23
Wednesd. 24	Thursday 24	Friday 24	Saturday 24	*Sunday* 24	Monday 24	Tuesday 24
Thursday 25	Friday 25	Saturday 25	*Sunday* 25	Monday 25	Tuesday 25	Wednesd. 25
Friday 26	Saturday 26	*Sunday* 26	Monday 26	Tuesday 26	Wednesd. 26	Thursday 26
Saturday 27	*Sunday* 27	Monday 27	Tuesday 27	Wednesd. 27	Thursday 27	Friday 27
Sunday 28	Monday 28	Tuesday 28	Wednesd. 28	Thursday 28	Friday 28	Saturday 28
Monday 29	Tuesday 29	Wednesd. 29	Thursday 29	Friday 29	Saturday 29	*Sunday* 29
Tuesday 30	Wednesd. 30	Thursday 30	Friday 30	Saturday 30	*Sunday* 30	Monday 30
Wednesd. 31	Thursday 31	Friday 31	Saturday 31	*Sunday* 31	Monday 31	Tuesday 31

NOTE.—To ascertain any day of the week, first look in the table for the year required, and under the months are figures which refer to the corresponding figures at the head of the columns of days below *For example:*—To know on what day of the week May 4 will he in the year 1883, in the table of years look for 1883, and in a parallel line, under May, is fig. 2, which directs to col. 2, in which it will be seen that May 4 falls on Friday.

¶ 1752 same as 1772 from Jan. 1 to Sept. 2. From Sept. 14 to Dec. 31 same as 1780. (Sept. 3-13 were omitted.)

TABLE—Showing the Quantity of Garden Seeds required to plant a given space.

DESIGNATION.	SPACE, AND QUANTITY OF SEEDS.
Asparagus	1 oz. produces 1000 plants, and requires a bed 12 feet square.
" Roots	1000 plant a bed 4 feet wide, 225 feet long.
Eog. Dwarf Beans	1 quart plants from 100 to 150 feet of row.
French "	1 " " 250 or 300 feet of row.
Beans, pole, large	1 " " 100 hills.
" " small	1 " " 300 " or 250 feet of row.
Beets	10 lbs. to the acre; 1 oz. plants 150 feet of row.
Broccoli and Kale	1 oz. plants 2500 plants, and requires 40 square feet of ground.
Cabbage	Early sorts same as broccoli, and require 60 square feet of ground
Cauliflower	The same as cabbage.
Carrot	1 oz. to 150 feet of row,
Celery	1 oz. gives 7000 plants, and requires 3 square feet of ground.
Cucumber	1 oz. for 150 hills.
Cress	1 oz. sows a bed 16 feet square.
Egg Plant	1 oz. gives 2000 plants.
Endive	1 oz. " 3000 " and requires 80 feet of ground.
Leek	1 oz. " 2300 " and " 60 "
Lettuce	1 oz. " 7000 " and " seed bed of 120 feet.
Melon	1 oz. for 120 hills.
Nasturtium	1 oz. sows 25 feet of row.
Onion	1 oz. " 200 "
Okra	1 oz. " 200 "
Parsley	1 oz. " 200 "
Parsnip	1 oz. " 250 "
Pepper	1 oz. gives 2000 plants.
Peas	1 quart sows 120 feet of row.
Pumpkin	1 oz. to 50 hills.
Radish	1 oz to 100 feet.
Salsify	1 oz. to 150 feet of row.
Spinage	1 oz. to 200 "
Squash	1 oz. to 75 hills
Tomato	1 oz. gives 2500 plants, requiring seed bed of 80 feet.
Turnip	1 oz. to 2000 feet.
Water Melon	1 oz. to 50 hills.

TABLE—Showing the Price per cwt. of Hay, at given Prices per ton.

Price per ton.	½ hundred.	1 hundred.	2 hundred.	3 hundred.	4 hundred.	5 hundred.	6 hundred.	7 hundred.	8 hundred.	9 hundred.	10 hundred.	11 hundred.
$	cts.	cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
4	10	20	40	60	80	1 00	1 20	1 40	1 60	1 80	2 00	2 20
5	12	25	50	75	1 00	1 25	1 50	1 75	2 00	2 25	2 50	2 75
6	15	30	60	90	1 20	1 50	1 80	2 10	2 40	2 70	3 00	3 30
7	17	35	70	1 05	1 40	1 75	2 10	2 45	2 80	3 15	3 50	3 85
8	20	40	80	1 20	1 60	2 00	2 40	2 80	3 20	3 60	4 00	4 40
9	22	45	90	1 35	1 80	2 25	2 70	3 15	3 00	4 05	4 50	4 95
10	25	50	1 00	1 50	2 00	2 50	3 00	3 50	4 00	4 50	5 00	5 50
11	27	55	1 10	1 05	2 20	2 75	3 30	3 85	4 40	4 95	5 50	6 00
12	30	60	1 20	1 80	2 40	3 00	3 60	4 20	4 80	5 40	6 00	6 60
13	32	65	1 30	1 95	2 60	3 25	3 90	4 55	5 20	5 85	6 50	7 15
14	35	70	1 40	2 10	2 80	3 50	4 20	4 90	5 60	6 30	7 00	7 70
15	37	75	1 50	2 25	3 00	3 75	4 50	5 25	6 00	0 75	7 50	8 25

TABLE—Showing the Number of Rails, Stakes, and Riders Required for each 10 Rods of Fence.

Length of rail.	Deflection from right line.	Length of panel.	Number of panels.	Number of rails for each 10 rods			Number of stakes.	Number of riders. (Single.)
Feet.	Feet.	Feet.	Feet.	5 rails high	6 rails high	7 rails high		
12	6	8	20⅔	103	123	144	42	21
14	7	10	16½	83	99	116	34	17
16½	8	12	13⅔	69	84	95	23	14

Table Showing the Number of Drains required for an Acre of Land.

The following Table shows the number of tiles of the different lengths made, which are required for an acre, and will be useful to those who may desire to purchase just enough for a particular piece of ground.

DISTANCE APART.	12-inch Tiles.	13-inch Tiles.	14-inch Tiles.	15-inch Tiles.
Drains 12 feet apart require....	3,630	3,351	3,111	2,934
" 15 " "	2,904	2,681	2,489	2,323
" 18 " "	2,420	2,234	2,074	1,936
" 21 " "	2,074	1,914	1,777	1,659
" 24 " "	1,815	1,675	1,556	1,452
" 27 " "	1,613	1,480	1,383	1,291
" 30 " "	1,452	1,340	1,245	1,162
" 33 " "	1,320	1,218	1,131	1,056
" 36 " "	1,210	1,117	1,037	968

In reference to tile-pipe drains, it must be remembered that the ditch may be much narrower than when stones are used, thus making a considerable saving in the expense of digging. The upper part of the earth is taken out with a common spade, and the lower part with one made quite narrow for the purpose, being only about four inches wide at the point.

Facts About Weeds,

Dr. Lindley estimates as a low average the following number of seeds from each of these four plants:

1 plant of Groundsel produces	2,080		
1 " Dandelion "	2,740	16,400	plants
1 " Sow Thistle "	11,040		
1 " Spurge "	540		

or enough seed from these four plants to cover three acres and a half, at three feet apart. To hoe this land, he says, will cost 6s. (sterling) per acre, and hence a man throws away 5s. 3d. a time, as often as he neglects to bend his back to pull up a young weed before it begins to fulfil the first law of nature. He recommends every farmer, whose vertebral column will not bend, to count the number of dandelions, sow thistles, etc., on the first square rod he can measure off.

This operation may be repeated in this country by applying all the above estimates to pig-weed, burdock, fox-tail, chick-weed, and purslane.

Table—Showing the Number of Loads of Manure and the Number of Heaps to each Load required to each Acre, the Heaps at Given Distances Apart.

Distance of heaps apart, in yards.	NUMBER OF HEAPS IN A LOAD.									
	1	2	3	4	5	6	7	8	9	10
3	538	269	179	134	108	89½	77	67	60	54
3½	395	168	132	99	79	66	56½	49½	44	39½
4	203	151	101	75½	60½	50½	43½	37¾	33½	30½
4½	239	120	79½	60	47¾	39¾	34¼	30	26½	24
5	194	97	64½	48½	38¾	32¼	27¾	24¼	21½	19½
5½	160	80	53½	40	32	26¾	22¾	20	17¾	16
6	131	67	44½	33½	27	22½	19½	16¾	15	13½
6½	115	57½	38¼	28½	23	19	16½	14½	12¾	11½
7	99	49½	33	24¾	19¾	16½	14	12½	11	10
7½	86	43	28¾	21½	17¼	14¼	12½	10¾	9½	8½
8	75½	37¾	25½	19	15¾	12½	10¾	9½	8¼	7½
8½	67	33½	22½	16¾	13½	11¼	9½	8½	7½	6¾
9	60	30	20	15	12	10	8½	7½	6¾	6
9½	53½	26¾	18	13½	10¾	9	7¾	6¾	6½	5½
10	48½	24¼	16½	12	9¾	8	7	6	5	4¾

Table—Showing the Number of Rails and Posts required for each 10 Rods of Post and Rail Fence.

Length of rail.	Length of Panel.	Number of panels.	Number of panels.	Number of rails for each 10 rods.			
Feet.	Feet.			5 rails high.	6 rails high.	7 rails high.	8 rails high.
10	8	20⅝	21	103	123	144	165
12	10	16½	17	83	99	116	133
14	12	13¾	14	69	84	95	109
16½	14	11¾	12	57	69	81	93

Measuring Land.

Farmers often desire to lay off small portions of land for the purpose of experimenting with manures, crops, etc.; but sometimes find difficulty in doing it correctly, for the lack of a few simple rules. The following table and accompanying explanation, which we copy from the *New England Farmer*, carefully studied, will make the whole matter perfectly clear.

ONE ACRE CONTAINS

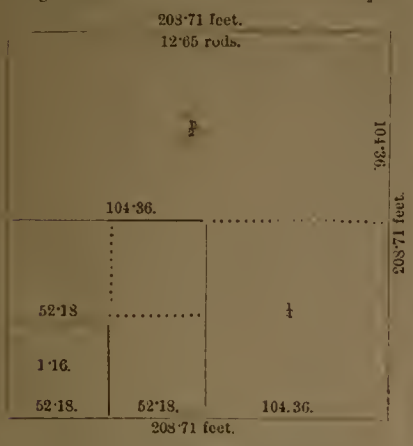
100 square rods; 4,840 square yards; 43,560 square feet.

ONE ROD CONTAINS

30·25 square yards; 272·25 square feet. One square yard contains nine square feet.

THE SIDE OF A SQUARE TO CONTAIN

One acre.....	208·71 feet	12·65 rods....	64 pices
One-half acre....	147·58 "	8·94 "	45 "
One-third acre....	120 50 "	7·36 "	37 "
One-fourth acre..	104·36 "	6·32 "	32 "
One-eighth acre..	73·79 "	4·47 "	22½ "



It will be seen by reference to the plan that a practice sometimes followed by farmers is very erroneous; if the side of a square containing one acre measures 208·71, one-half that length will not make a square containing one-half an acre, but only one-fourth of an acre, and one-third the length of line will enclose a square of one-ninth an acre, and one-fourth the line squared, will contain one-sixteenth an acre, and so on.

Garden Seeds for Half an Acre.

The following seeds, with judicious management, will fully crop a garden of half an acre, which will supply a moderate-sized family with vegetables throughout the year. Vegetable seeds, where carefully grown in this country, are (with a few exceptions) preferable to those imported; but the utter carelessness manifested by many in keeping them apart when growing is not to be recommended

1 oz.	Asparagus.	4 oz.	Mustard.
3 qts.	Beans, of sorts.	½ oz.	Melons.
4 oz.	Beet, of sorts.	½ oz.	Okra.
½ oz.	Broccoli.	2 oz.	Onion, sorts.
½ oz.	Cauliflower.	1 pap.	Parsley.
4 oz.	Cabbage, of sorts	1 oz.	Parsnips.
½ oz.	Celery.	1 pap.	Peppers.
8 oz.	Cress.	½ oz.	Pumpkin.
½ oz.	Cucumber.	8 qts.	Peas.
1 oz.	Carrot.	8 oz.	Radish.
1 qt.	Early Corn.	½ oz.	Salsify.
1 pkt.	Egg Plant.	½ oz.	Squash.
½ oz.	Endive.	8 oz.	Spinage.
½ oz.	Leek.	1 pap.	Tomatoes.
1 qt.	Lima Beans.	2 oz.	Turnips.
1 oz.	Lettuce, of sorts.	6 pap.	Pot & Sw't Herbs

Seeds should always be kept in bags, in a dry, airy situation. Wall closets and cellars are objectionable, from their dampness. All seeds will keep two, and many from three to six years.

How to lay off a Square Acre.

Measure 209 feet on each side, and you have a square acre within an inch.

Box Measures.

Farmers and market gardeners will find a series of box measures very useful; and they can readily be made by any one who understands the two-foot rule, and can handle the saw and hammer. The following measurements, it will be seen, vary slightly from the regular bushel adopted by some of the countries, but are sufficiently accurate for all ordinary purposes:

A box 16 by 16⅓ inches square, and eight inches deep, will contain a bushel, or 2150.4 cubic inches, each inch in depth holding one gallon.

A box 24 by 11.2 inches square, and 8 inches deep, will also contain a bushel or 2150.4 cubic inches, each inch in depth holding one gallon. A box 12 by 11.2 inches square, and 8 inches deep, will contain half a bushel, or 1075.2 cubic inches, each inch in depth holding half a gallon.

A box 8 by 8.4 inches square, and 8 inches deep, will contain half a peck, or 298.8 cubic inches. The gallon, dry measure.

A box 4 by 4 inches square, and 4 2 inches deep, will contain one quart, or 67.2 cubic inches.

Weights and Measures.—Weight of Grain, etc.

ARTICLES.	New York.	Ohio.	Pennsylvania.	Indiana.	Wisconsin.	Iowa.	Illinois.	Michigan.	Connecticut.	Massachusetts	Rhode Island.	Kentucky.	New Jersey.	Vermont.	Missouri.	Canada.
Wheat, lb.	60	60	60	60	60	60	60	60	56	60	..	60	60	60	60	60
Rye	56	56	56	56	56	56	54	56	56	56	..	56	56	56	56	56
Corn	56	56	56	56	56	56	56	56	56	56	..	56	56	56	52	56
Oats	32	32	32	32	32	35	32	32	28	30	..	33	30	32	m	34
Barley	48	48	47	48	48	48	44	48	..	46	..	48	48	46	m	48
Buckwheat	48	..	48	50	42	52	40	42	45	46	..	52	50	46	m	48
Clover-seed	60	64	..	60	60	60	..	60	..	..	..	60	64	..	m	60
Timothy-seed	44	42	..	45	..	45	..	m	..	m	..	45	..	..	m	48
Flax-seed	56	56	..	56	..	56	..	m	..	m	..	56	55	..	m	56
Hemp-seed	44	..	..	44	..	44	..	..	..	..	..	..	..	..	..	..
Blue-grass seed	14	..	..	14	..	14	..	..	..	..	..	..	..	..	..	..
Apples, dried	22	25	..	..	28	24	..	28	..	..	..	..	..	..	..	22
Peaches, dried	32	33	..	..	28	33	..	28	..	..	..	..	..	..	..	22
Coarse salt	55	50	85	50	..	50	..	..	..	70	..	50	..	..	50	56
Fine salt	56	50	62	50	..	50	..	..	..	70	..	50	..	..	50	56
Potatoes	60	..	..	60	..	60	..	..	60	60	60	..	..	60	..	..
Peas	60	..	..	..	..	..	..	..	..	60	..	..	..	..	..	60
Beans	62	56	..	60	..	60	..	..	..	60	..	60	..	..	..	60
Castor beans	46	..	..	46	..	46	..	..	..	..	..	..	..	..	..	.
Onions	57	..	..	57	..	57	..	..	..	50	50	..	..	..	..	.
Corn meal	..	..	..	50	..	..	..	..	..	..	50	..	..	..	..	..
Mineral coal	..	..	..	70	..	..	..	..	..	..	..	..	..	..	..	..

A law of New York, in force at the present time, adopts the United States *bushel of measure*, viz. : 2150·42 cubic inches per bushel, 1075·21 half-bushel; and the wine gallon, 231 cubic inches.

To reduce cubic feet to bushels, struck measure, divide the cubic feet by 80, and multiply by 45.

Table.—Showing the Political Divisions of the World, arranged according to Size.

	Square Miles.
1. Russian Empire	7,862,568
2. Chinese "	4,095,334
3. *British "	4,410,559
4. United States	3,578,392
5. British North America	3,523,083
6. Brazil	3,231,047
7. Australian Continent	2,945,219
8. Turkish Empire	1,917,472
9. India	1,552,028
10. China (proper)	1,300,000
11. Argentine Republic	826,828
12. Mexico	773,144
13. Egypt	659,0·1
14. Turkestan	640,516
15. Persia	502,344
16. Bolivia	535,769
17. Peru	510,107
18. Venezuela	368,235
19. U. S. of Colombia	357,179
20. Tripoli	344,423
21. Morocco	259,593
22. Afghanistan	258,530
23. Texas	247,356
24. Austria	240,381
25. Madagascar	232,315
26. Ecuador	218,984
27. France	209,428
28. Spain	195,607
29. California	188,981
30. Central America	178,869
31. Sweden	170,634
32. Beloochistan	165,830
33. German Empire	160,207
34. Abyssinia	158,302
35. Dakota	152,000
36. Japan	149,399
37. Montana	143,776
38. Prussia	135,806
39. Chili	132,624
40. Paraguay	126,352
41. New Mexico	121,201
42. Great Britain	121,115
43. Norway	120,295
44. Arizona	113,916
45. Nevada	112,090
46. Italy	109,837
47. Colorado	104,500
48. Oregon	95,274
49. Idaho	90,932
50. Utah	88,056
51. Wyoming	88,000
52. Minnesota	83,531
53. Kansas	81,318
54. Transvaal Republic	77,964
55. Nebraska	75,995
56. Washington	69,994
57. Indian Territory	68,991
58. Uruguay	66,716
59. Missouri	65,350
60. Florida	59,268
61. Georgia	58,000
62. Michigan	56,451
63. Illinois	55,410
64. Iowa	55,045
65. Wisconsin	53,924
66. Arkansas	52,198
67. Alabama	50,722
68. North Carolina	50,704
69. Orange Free State	48,049
70. Mississippi	47,156
71. New York	47,000
72. Pennsylvania	46,000
73. Tunis	45,710
74. Tennessee	45,600
75. Louisiana	41,346
76. Ohio	39,964
77. Virginia	38,352
78. Portugal	37,977
79. Kentucky	37,680
80. Maine	35,000
81. South Carolina	34,000
82. Indiana	33,809
83. Bavaria	29,373
84. West Virginia	23,000
85. Servia	21,210
86. Greece	19,353
87. St. Domingo	17,826
88. Switzerland	15,722
89. Denmark	14,734
90. Netherlands	12,680
91. Belgium	11,373
92. Maryland	11,124
93. Vermont	10,212
94. Hayti	10,205
95. Liberia	9,567
96. New Hampshire	9,280
97. Fejee Islands	8,036
98. Massachusetts	7,800
99. Sandwich Islands	7,633
100. New Jersey	7,576
101. Wurtemburg	7,532
102 Baden	5,912
103. Saxony	5,779
104. Mecklenburg-Schwerin	5,190
105. Connecticut	4,674
106. Papal States	4,552
107. Hesse-Darmstadt	2,969
108. Oldenburg	2,469

* Exclusive of Hudson's Bay Territory.

A LIST OF MODERN ABBREVIATIONS USED IN WRITING AND PRINTING.

A. or Ans. Answer.
A. A. S. Fellow of the American Academy.
A. B. Bachelor of Arts.
Acct. Accountant.
A. C. or B. C. Before Christ.
A. D. In the year of our Lord.
A. M. Master of Arts; Before noon; In the year of the world.
Æt. Aged.
Abp. Archbishop.
Agt. Agent.
Att'y. Attorney.
Bart. Baronet.
Bbl. Barrel.
Benj. Benjamin.
Bro. Brother.
B. V. Blessed Virgin.
C. C. P. Court of Common Pleas.
Caps. Capitals
Capt. Captain.
Cash. Cashier.
Cent. or C. A hundred.
Chap. Chapter.
Chron. Chronicles.
Cl. or Clk. Clerk.
Co. Company; County.
Col. Collector; Colonel; Collossians.
Coll. College; Colleague.
Com. Commissioner; Commodore.
Const. Constable.
Con. Contra; on the other hand.
Cor. Corinthians.
Cor. Sec. Corresponding Secretary.
C. O. D. Collect on Delivery.
Cr. Credit; Creditor.
C. S. Keeper of Seal.
Cts. Cents.
Cur. Current; this month.
Cwt. A hundred weight.
Cyc. Cyclopædia.
D. D. Doctor of Divinity.
Dan. Daniel.
Dea. Deacon.
Deg. Degree.
Dept. Deputy.
Deut. Deuteronomy.
Do. or Ditto. The same.
Dr. Debtor; Doctor.
E. East.
Eccl. Ecclesiastes.
Ed. Editor; Edition.
E. G. For example.
Eng. England; English.
Ep. Epistle.
Eph. Ephesians; Ephraim.
Esa. Esaias.
Esq. Esquire.
Etc. Et cetera; and so forth.
Ex. Example; Exodus.
Exr. Executor.
Ez. Ezra.
Fr. France; Francis.
Fahr. Fahrenheit.
F. R. S. Fellow of the Royal Society.
Gal. Galatians.
Gen. General; Genesis.
Gent. Gentleman.
Geo. George.
Gov. Governor.
G. P. O. General Post Office.
H.B.M. His or Her Britannic Majesty.
Heb. Hebrews.
Hhd. Hogshead.
Hist. History; Historical.
Hon. Honourable.
H. R. House of Representatives.
H. S. S. Fellow of the Historical Society.
Hund. Hundred.
Ibid. In the same place.
I. E. That is (*id est*).
Id. The same.
I. H. S. Jesus the Saviour of men.
Inst. Instant.
Isa. Isaiah.
Jac. Jacob.
Jas. James.
Jer. Jeremiah.
Jno. John.
Josh. Joshua.
Judg. Judges.
Jun. or Jr. Junior.
K. King; Knight.
K. G. Knight of the Garter.
Km. Kingdom.
Kt. Knight.
Lat. Latitude; Latin.
Lbs. Pounds.
Ld. Lord; Lady.
Ldp. Lordship.
Lev. Leviticus.
Lieut. Lieutenant.
LL.D. Doctor of Laws.
Lon. Longitude.
Lond. London.
L. S. Place of the Seal.
M. Marquis.
Maj. Major.
Mat. Matthew.
Math. Mathematics.
M. C. Member of Congress.
M. D. Doctor of Medicine.
Messrs. Gentlemen; Sirs.
M. P. Member of Parliament.
Mr. Master, or Mister.
Mid. Midshipman.
Mrs. Mistress.
MS. Manuscript.
MSS. Manuscripts.
N. North.
N. B. Take notice.
Neh. Nehemiah.
No. Number.
N. S. New Style.
Num. Numbers.
Obj. Objection.
Obt. Obedient.
O. S. Old Style.
P. Page.
Pp. Pages.
Parl. Parliament.
Per. By the (as per yard; by the yard).
Per cwt. By the hundred.
Pet. Peter.
Phil. Philip; Philippians.
Philom. A lover of learning.
P. M. Post Master; Afternoon.
P. O. Post Office.

Pres. President.
Prin. Principal.
Prob. Problem
Prof. Professor.
Prov. Proverbs.
P. S. Postcript.
Ps. Psalms.
Pub Doc. Public Document.
Q. Queen; Question.
Qr. Quarter.
Q. M. Quarter Master.
Rec'd. Received.
Regr. Register.
Rep. Representative.
Rev. Reverend; Revelation.
Rom. Romans.
Rt. Hon. Right Honourable.
S. Shilling; South.
S. A. South America.
Sam. Samuel.
Sch. Schooner.
Sec. Secretary; Section.
Sen. Senator; Senior.
Serg. Sergeant.
Servt. Servant.
Ss. Namely.
St. Saint; Street.
Supt. Superintendent.
Surg. Surgeon.
Switz. Switzerland.
Thess. Thessalonians.
Tho. Thomas.
Tim. Timothy.
Ult. (*Ultimo*). The Last.
U. S. A. United States Army.
U. S. N. United States Navy.
V. or Vide. See.
Viz. Namely.
Vols. Volumes.
Vs. (*Versus*). Against.
W. West.
W. I. West Indies.
Wm. William.
Wp. Worship.
Yd. Yard.
Yr. Year.
&. And.
&c. And so forth.

LENGTH OF THE PRINCIPAL RIVERS OF THE GLOBE.

Name of River.	Where Located.	Source.	Empties.	Length miles.
Missouri	North America	Rocky Mountains	Gulf of Mexico	4,500
Mississippi	North America	Lake Itaska	Gulf of Mexico	3,200
Amazon	Brazil	Andes	Atlantic Ocean	3,200
Hoang-Ho	China	Koulkoun Mountains	Yellow Sea	3,000
Murray	Australasia	Australian Alps	Encounter Bay	3,000
Obi	Siberia	Altaian Mountains	Arctic Ocean	2,800
Nile	Egypt, Nubia	Blue Nile, Abyssinia	Mediterranean	2,750
Kang-tse-Kia	China	Thibet	China Sea	2,500
Lena	Siberia	Heights of Irkutsk	Arctic Ocean	2,500
Niger	Soudan	Base of Mt. Loma	Gulf of Guinea	2,300
St. Lawrence	Canada	River St Louis	G. of St. Lawrence	1,960
Volga	Russia	Lake in Volhonsky	Caspian Sea	1,900
Maykiang	Siam	Thibet	Chinese Gulf	1,700
Indus	Hindostan	Little Thibet	Arabian Sea	1,700
Danube	Germany, Austria Hungary, and Turkey	Black Forest	Black Sea	1,630
Mackenzie	North America	River Athabasca	Arctic Ocean	2,500
Brahmapootra	Thibet	Himalaya	Bay of Bengal	1,500
Columbia	North America	Rocky Mountains	Pacific Ocean	1,090
Colorado	North America	San Iaba	Gulf of California	1,000
Susquehana	North America	Lake Otsego	Chesapeake Bay	400
James	North America	Allegheny Mountains	Chesapeake Bay	500
Potomac	North America	Gr. Black Bone Mount'n	Chesapeake Bay	400
Hudson	North America	Adirondacks	Bay of New York.	325

THE CHRISTIAN SECTS ARE DIVIDED ABOUT AS FOLLOWS:

COUNTRY.	Roman Catholic.	Protestant.	Eastern Church.
America	47,192,000	29,959,000	10,000
Europe	142,117,000	68,028,000	69,782,000
Asia	4,695,000	713,000	8,486,000
Africa	1,106,200	685,000	3,200,000
Australia and Polynesia	360,000	1,450,000	

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